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Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

Vol. VII. No.1. Washington, D. C. January 2, 1923.

HOW ABOUT THE WIDOWS AND ORPHANS?

By Will C. Barnes, Washington

At the recent annual meeting of the officers and members of the Government Employees' Mutual Relief Association, the showing made by our little association was remarkably good. The reserve funds invested in interest-paying securities now amount to about $6,500, the interest on which pays nearly all the annual costs of running the association. There will be a surplus from the income for 1922 which will add $500 or $600 to this reserve. Thus, in time, the association, if it has no backsets, will become more than self-supporting.

It is interesting to look back over our record and realize what can be done through such cooperative methods in assuring ourselves and each other of some reimbursement for those accidents and sicknesses which overtake the best of us, no matter how careful we may be. Take the case of Forest Supervisor Goddard, whose recent death cast a gloom over the entire service. Goddard joined the association in its early years, but let his membership lapse. In 1917 he was reinstated and kept up his dues regularly after that. For hospital, doctors' bills and funeral expenses his widow received more than $650, which paid every debt incurred in his long sickness. The amount Goddard had paid into the association was nothing whatever when compared with the total returned to his widow at his death.

We frequently hear of instances where men have allowed their membership with the organization to lapse, and then find themselves sick or the victims of an accident and can not secure reimbursement. Take the case of Chapline, for instance. Two or three years ago he ran a sliver in his hand (probably from scratching his head), which brought about a very serious case of blood poisoning. He was obliged to go to the hospital and had to pay hospital and surgeon bills, all of which would have been borne by the association had he kept up his membership. The joke was on him in this case. It is needless to say that as soon as Chap recovered from this accident and could legitimately ask for a restoration to the association he did so. No sooner did he find himself restored to the rolls than he took advantage of the situation to contract a serious case of sickness, which cost the association quite a sum, although he had paid in only the first year's fees amounting to $12. The joke was on the association that time.

If you have any interest in your family, want your widow to wear decent clothes to your funeral, or don't want to dodge your doctor when you see him coming, for goodness sake don't neglect this matter. Sit right down at your desk and write a check for $7, one dollar of which is the initiation fee and $6 of which will pay your dues in the association for six months. Send it to Secretary H. B. Herms, care the Washington Office, and get into the organization before something happens to you. Do it now! You may fall over a cliff next week and sprain your neck. If you have a wife tell her to keep you reminded to keep the payments up right along. She'll do it all right. If you haven't a wife get one, they are a good thing to have round the house.

FIRE STUDIES REVEAL NEW FACTS CONCERNING LIGHTNING STORMS

By H. T. Gisborne, Priest River Exp. Station

The recent study of lightning storms and their relation to forest fires in District 1 has shown that there were noticeable differences between the storms which started fires and those which did not. The data are based on 1,300 detailed thunderstorm reports obtained from nearly 150 observers during the fire season of 1922.

For the District as a whole approximately one lightning storm out of four was found to cause fires which were reported by lookouts. As would naturally be supposed, storms with very numerous flashes of lightning largely directed toward the ground caused fires more often than storms with only a few flashes which were largely from cloud to cloud. Rating the storms as heavy, medium and light, according to the number of flashes, it appears that about one-third of the heavy, one-fourth of the medium and only one-tenth of the light storms caused fires. Furthermore, over half the storms causing fires were heavy, one-third medium, and one-tenth light. From which it is evident that the heavy storm is by far the most dangerous.

It was also found that the fire-starting storms were characterized by having over half of their flashes directed toward the ground, while the non-dangerous storms had considerably more than half of their flashes occurring only as cloud to cloud lightning. The fact that there were 528 reports submitted by over 100 different lookouts and rangers giving complete information on this phase of the investigation shows that such observations are possible in practice.

There were also 684 reports giving a complete record of the rainfall in storms causing or not causing fires. A rather unexpected result was obtained in this connection. For storms not causing fires it was found that on the average rain fell for 12 minutes before and 42 minutes following the lightning. For storms causing fires the averages were 10 and 120 minutes respectively. In other words, the average rainfall following fire-starting lightning storms continued nearly three times as long as that of lightning storms which did not set fires. Moreover, it was found that the rainfall was heavier during the lightning of the fire-starting storms. The explanation for this rather interesting condition seems to lie in the known meteorological fact that heavy lightning goes with heavy rain during the lightning season. The reason that so many fires are started despite this greater amount of rain is to be found in another known fact, viz., that a much greater percentage of lightning reaches the ground in the heavier storms than in the lighter and relatively "dry" storms.

This study of the characteristics of lightning storms is to be continued and rounded out with the records of a series of years, so that the findings can be utilized for predicting the relative danger to be expected from electrical storms.

PERSONNEL PROBLEMS

By Wm. R. Kreutzer, D-2

We measure a man's height in inches or centimeters. Pounds and ounces or grams and centigrams offer us exact standards for measuring his weight, but there are no absolute standards for measuring the man himself, and probably there never can be. We certainly can not put a man on the scales and ascertain that he has so many liters of good sense or so many cubic inches of executive ability or so many kilowatts of disposition to industry. Human values, therefore, can be standardized only relatively.

We are now endeavoring to ascertain approximately the average or normal by the study of groups of men in the Forest Service of the same or similar grades of service work or occupation. We must agree that some men, by reason of the nature, position and requirements of the work to which they have been assigned, are a misfit - a square peg in a round hole - so to speak. Some men are not fitted for city life; others are not fitted for country life, and it is possible that some are not fitted for either.

Only recently while on a forest fire, some of the Forestry students stated that they had had enough of the profession of Forestry, if fighting fire was considered Forestry. Suffice it to say that they were given to understand that fighting forest fires was an exceedingly important factor in the practice of Forestry on the National Forests.

More careful attention should be given the employee while he is serving his probational period. Failure to determine the ability of the appointee to perform the duties of his position during the probational period has been the chief cause of most of the personnel cases.

After men are once permanently appointed, other methods must be resorted to in order to qualify them for the various lines of Forest Service work. The personalities of the Supervisors, Deputies, Forest Assistants and Forest Examiners and the effect of such personalities upon rangers, for instance, undoubtedly is a very important factor in the development of these men. The same, possibly, is true of the men higher up in the scale of positions.

A certain type of Supervisor will get good results with a certain type of men in his organization, but only a certain type. It should be remembered in this connection that certain men harmonize and work well together. Others are antagonistic and discordant. By their very nature they can not work in the harmony which is essential to efficiency.

We have a personnel rating system. It would seem that we should classify the various items of information needed in rating our men with reference to their work and environment. These, it is believed, are health, character, intelligence, disposition to industry, natural aptitudes and experience.

Under health, all a man's physical attributes should be included. It would seem that a man should be considered as to his size, strength, endurance, condition of body, predisposition to health, as to disease, as to his moral and mental health and as to his sobriety.

Character embraces honesty, truthfulness, loyalty, discretion and prudence, enthusiasm, courage, steadfastness, dependability and a number of other related factors. A man who is deficient in honesty, in truthfulness, in loyalty will find half a dozen ways to beat every possible kind of check upon his reliability.

Intelligence, of course, relates to the man's mental ability, his ability to learn and his ability to understand and follow instructions. This is a very important element in Service work, since instructions alone will not bring results if they are not followed or if they are misunderstood. Among the qualities which are included under intelligence are judgment and memory, the powers of observation and expression in speaking or in writing, imagination, reasoning power and all other qualities which are purely intellectual.

Disposition to industry is a very important element and one in which we are very liable to misjudge others. A man once said: "All men are lazy, but some are lazier than others." It might be better to put it this way: "All men are industrious, but some are more industrious than others."

The element of experience plays a very important part in the qualifications of a Forest Officer. A man might fit into our organization in so far as all of the other points that I have enumerated are concerned and yet not have either education or the training for the particular position to which he has been assigned. What should be done with him? It is a question of either taking the man with aptitudes and educating him for the particular line of work he is expected to undertake in the Service through our educational sections, or eliminating him and taking some one who has perhaps less natural aptitude but more experience and training. A successful solution of this phase of the personnel problem might be brought about by a more careful selection of new men and then take this raw material, if I may use the term, and mould it into the District Rangers, Deputy Supervisors and Supervisors of the future by proper training and education in the Service. If we can select men with natural aptitudes, stability of character, good health and all other fundamentals and then train them for the work they are to do, we get the very best results. There can be no question about this.

A training section for the purpose of ascertaining the cause for the unsatisfactory service of employees and the education and development for those that show any inclination to advance undoubtedly would be of considerable value in our Service. For instance, if the officer fails to fight forest fires satisfactorily, here is a case for the training section, since he may do satisfactory work in many other lines.

The practice of selecting Supervisors and filling the vacancies of higher Forest officers from the ranks has done much to build up and strengthen the general personnel of the Service. The practice of having a "waiting list" of previous employees and reinstating them, if they left the Service in good standing, is a good one.

Personal contact with the men in the field has done more to improve our personnel than any other factor. Credit for good work should always be given and this should be used as a foundation upon which to build our larger superstructure which will gradually fill in and crowd out the weak places caused by poor work.

We should find in every man as many of his good points as possible, stress these and use them as stepping-stones upon which to raise the lower points to a higher level.

Superior officers should stand behind their men in order to overcome failure in the execution of their duties. It is the oneness, the merging of personality, that has made the Forest Service what it is to-day. Hence, the success of the Service, to a considerable degree, is shared by every member and each should feel proud that he has taken part in the development of this great organization.

Many instances in personnel cases might be recalled but when we simmer it all down, the final result depends upon our sustained individual efforts. The word "think" should be the first letter of our alphabet and the remainder of our success in this big service is contained in the second letter, which is spelled "W-O-R-K."

WE MISS YOU RANGER BILL

By E. D. Fletcher, D-7

Old Ranger Bill has drifted West
To wear his chaps and a velvet vest,
To wield a rope and wrangle sheep
His pen is stop't; he's gone to sleep.

His sayings "Pat" are quoted still
Who's who and why? Says Ranger Bill
That says "six pencils thou shalt use,"
Cut out cards - drop the booze.

Oh! where is he that rolled his quid
From left to right without a skid
Shouldered his pen like a peavy stock
And hit who it might, John on the spot.

WASHINGTON NOTES

New Moving Pictures

The Forest Ranger's Job: This is an old film made new. It shows the Ranger fighting fires, maintaining telephone lines, appraising and scaling timber, inspecting range, building roads, trails, bridges, dams, and ranger stations, supervising recreational uses, and acting as mayor for summer home communities. The Ranger's wife is also shown as an important part of the organization, even though she isn't on the pay roll.

Crops and Kilowatts: This is a new one-reel picture, showing the influence of the National Forests on streamflows. There is shown a great hydro-electric development on the Sierra Forest and canals for irrigation. The irrigation scenes were largely taken in the Colorado River valley near Grand Junction, Colo., the water coming from the Uncompahgre, Gunnison, and Battlement Forests.

FOREST PRODUCTS LABORATORY

Seats in Yale Stadium of Douglas Fir: When the famous Yale Bowl was built in 1913 and 1914, the permanent seats were built of Douglas fir. According to information received, the material has proved excellent for the purpose and satisfactory in every respect. The seats have been painted twice and will be painted again this year. The maintenance cost of the Douglas fir seats has been comparatively small. It is estimated that the original seats will be good for at least seven or eight years more if kept painted. These seats are very substantial and undergo a good deal of rough treatment, as they are often walked upon and in a few instances repairs have been necessary due to some unusually enthusiastic display of college spirit.

This information is interesting in connection with the zeal for huge stadiums now being manifested by universities.

Former Laboratory Member Author of Foreign Bulletin: Nils B. Eckbo, once a Laboratory member, and now in charge of Timber Investigations, Forest Department, Pretoria, Union of South Africa, has written a Forest Department publication entitled, "The Seasoning of South African Woods."

Very little has been done on the seasoning of these woods and Mr. Eckbo is on the way to become an authority in this field. One of the species on which work was done is karri gum (Eucalyptus diversicolor), which in one splendid plantation reached a diameter of two feet and a height of 110 feet at thirty years.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Study Courses Grow in Favor: The study course work has grown to such proportions that two men will be detailed to the District Office this winter to assist Mr. Keplinger in handling it. Two hundred and twenty-four members of the field force have enrolled in from one to four of the eleven courses offered; this is 87 per cent of the entire personnel in the field. In addition, twenty-seven members of the District Office have enrolled.

A Record Year: With the recent award of the Squirrel Creek unit to Stroup and Sheppard, and the Muddy Creek unit on the Medicine Bow to the Wyoming Timber Company, the sale of timber for the year totaled 1,800,000 railroad ties, 12,128,000 feet of sawlogs and 26,500,000 feet of mine prop material. This makes a total of six units sold during the calendar year. The record for the Forest in the amount sold in any year had been broken in September with the sale of the Lake Creek unit. The value of timber sold to date, exclusive of mine prop material, whose removal is optional, totals over $271,000.--Med. Bow.

Game Legislation: The Legislative Committee of the Colorado Game and Fish Protective Association has begun a series of sessions to consider game and fish matters and any bearing the subject might have on proposed state legislation. The consensus of opinion of the sportsmen of the state appears to be for better enforcement of the present laws and the creation of more state game refuges, and giving them adequate protection, instead of an entirely closed season on deer. The present open season of four days in October is, therefore, recommended for continuance and stress laid on law enforcement and refuges.

DISTRICT 3 - SOUTHWESTERN DISTRICT

When Elk Come Down: "This picture is undoubtedly the most popular so far shown locally in the interest of game protection. The picture is very clear and typical of the game region.

I made it a point to study the attitude of the audience during the exhibition and many were the favorable comments expressed by several relative to the government's policy toward game protection. The climax came when the two Forest Rangers caught the "Poacher" (tooth hunter). At this incident the crowd cheered loudly thereby manifesting their full sympathy and approval of the idea of game preservation and protection."--Carson.

Grass Exhibit: Supervisor Wales of the Prescott and his forest force gathered and prepared an excellent collection of southwestern grasses and browses for display at the Northern Arizona State Fair at Prescott. About a dozen or fifteen complete plants of each of the grass specimens were put in a bunch and the bunches attractively arranged on two panels each about 4 x 8 feet. The exhibit drew a great deal of attention. At the close of that fair, it was taken with the other Department of Agriculture exhibit materials to the big fair at Phoenix, where it met with the same success and later was shown at the State Convention of the New Mexico Educational Association in Albuquerque. The panels are now on display for a few days in the corridor of the District Office.

Administrative Sites: The Forest Service has frequently been criticized for holding too large an acreage of administrative sites. In this connection, the following facts are illuminating: there are 286 administrative sites in District 3 having a total acreage of 49,591 acres or 002.5 per cent of the total area or an average of 173 acres per site. Of the total acreage 5,997 acres are agricultural land, which if divided into 160 acre homesteads, would only make 37 units. Dividing the agricultural area contained in the administrative sites among the 286 stations, the average amount per station would amount to only 20 acres or 12 per cent of the total area so held. The remaining 88 per cent is rough pasture land unsuitable for cultivation. Certainly, one station of 173 acres for each 65,818 acres having on an average 20 acres of agricultural land is not an excessive amount to be retained for administrative purposes. The above figures show that the Forest Service has been very conservative in its retention of agricultural lands for administrative use.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Recreation Development: Mr. R. E. Gery returned last night with W. S. Basinger, General Passenger Agent of the Union Pacific, F. W. Gentsch, Superintendent of the Dining Car Service, J. P. Mack, Locating Engineer of the Los Angeles Lines, William M. Barr, Assistant Water Engineer for the U. P. Lines; George E. Goodman, Chief Engineer for the National Park Service, and Supervisors W. M. Mace and W. M. Riddle, from a visit to Cedar Breaks, Bryce Canyon and Zion National Park.

Many points were visited, Mr. Gery said, in connection with the examination of the Cedar Breaks and Bryce Canyon areas. The railroad officials will recommend the construction of a lunch house at Cedar Breaks and a hotel at Bryce Canyon. The lunch house will cost the company in the neighborhood of $5,000, and the hotel at Bryce approximately $150,000. If conditions warrant, the company may also construct a hotel at either Strawberry Point, Navajo Lake, or Duck Springs. The Wylie camp in Zion National Park will possibly be taken over by the U. P. System, and more complete accommodations provided for the tourists.

It is generally understood that an investigation will be made on the Kaibab National Forest next summer for the purpose of locating a hotel on that Forest, preferably on National Forest land and not on the brink. The most serious question considered was the available water supply.

Land Exchange Outlook Bright: District Forester R. H. Rutledge and Assistant District Forester R. E. Gery returned December 1 from Boise, where they attended a meeting of the State Land Board, regarding land exchange. Representatives of stockmen from Bancroft and Malad were present to protest against the exchange, which affects range used by them, (Port Neuf Division and part of the Weston Division of the Cache Forest). Their arguments against the exchange were that the state did not furnish the protection that the Forest Service did, and that if the exchange went through they might find themselves driven from their range and out of business within a few years. Nevertheless the exchange was approved by the State Land Board by a 4 to 1 vote. The man who voted against the exchange did so, realizing that it was a good thing for the state, but he rather agreed with the protesting stockmen that their rights to the range should be better protected before the exchange was consummated.

This Report's Full of Meat! W. D. Cruise, of Bishop, Calif., was arrested for leaving camp fire unextinguished on the Inyo at Long Lake. He demanded a jury trial. The case looked very slim at first - all on circumstantial evidence - even the District Attorney being doubtful of the outcome. Cruise got an attorney, and there seemed to be a general feeling that he would walk away with the case. By persistence and diligence of local Forest officers in getting affidavits and witnesses to the effect that Cruise was the only possible man who could have left that particular fire burning, Cruise finally thought it best to plead guilty when he found that the Forest Service was in earnest. A jury trial was set for a certain date in the local justice's office, then postponed to a later date because Cruise did not show up. He learned that we intended to make his case a Federal one if the case was not brought to a close. He suddenly pleaded guilty, was fined $50 (and a 30-day sentence suspended on good behavior) by Justice Yaney of Bishop. The local effect is good.

Another Bouquet: The Manager of the Los Angeles Tenth Annual Automobile Show told me that he visited the Riverside Fair in order to size up the exhibits and see which of them they wanted at the Auto Show.

After looking over everything he decided that the Forest Service had far the best exhibit there and the only one that he wanted at the Auto Show.--L.A.B.

Some Fire Detection: One day last week a tent house at Auberry caught fire and a small crew of men were busily engaged in extinguishing it when Supervisor Benedict came driving along on his way to Big Creek. One of the men looked up in surprise and said: "How the dickens did you know about this fire?" Without batting an eye, Benedict replied: "Why, Shuteye Lookout picked it up and notified me." The fellow scratched his head in a puzzled sort of way. "But it's only been burning about five minutes." "I know it," replies Benedict. "How far is it to Northfork?" asks the fire fighter. "Thirteen miles," is the prompt reply. "Well, how did you get here," he asks, looking around. "In this machine," says Benedict, and then the guy tumbles to the joke.--Sierra.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Timber Sale Business Active: At the present time over one billion feet of timber is being advertised for sale in D-6. On the Olympic Forest two advertisements are running totaling 160 million feet, and a third of thirty million feet is about ready for publication. The receipts for the first quarter were over $200,000. A large number of informal applications are on file.

Putting It Across: The Annual Edition of the Oregonian to be issued about January 1 will probably carry several Forest Service stories, about 6,000 words. The editors have asked for illustrated articles on timber production, road construction, range appraisal, and forest protection; also a large number of fillers. The annual edition of the Portland Telegram also carried several Service stories, submitted at the request of this paper. The Tacoma Ledger is featuring a series of Forest Service stories, one on the kiln drying study having appeared and probably several to appear later from Dr. J. V. Hofmann and Deputy Supervisor Griffith. Griffith has made a complete "sale" of the Service to the Sunday editor of the Ledger.

DISTRICT 7 - EASTERN DISTRICT

THE FORESTER, Mr. H. S. Graves, and Mr. Austin Cary are among the many Big Trees who will attend the 20th annual meeting of the Massachusetts Forestry Association to be held in Boston at the end of December.

The Massachusetts Association is one of the oldest forestry associations in the country being founded in 1902 by Mr. Joseph Nowell of Winchester, Massachusetts. During these 20 years much has been accomplished in forestry and the Massachusetts Association as a body has been responsible for much wise forestry legislation, both national and state, having fought for nearly ten years to bring about what is now known as the Weeks Law. Those who can attend this auspicious meeting are fortunate, since no doubt there will be many John Bunyon stories told of what was - and what is - and what ought to be in forestry.--E.D.F.

A DRY PERIOD is the Forecast for the Florida during the coming Fire Season, the celebrated "licker" and "chink" smuggling industry which has been carried on partly within the National Forest boundary during the past two years by the far-famed auxiliary schooner "Success" having come to an abrupt end in the November term of the Federal court at Pensacola. The chief smuggler was given a jail sentence and a heavy fine and a heavy fine was also imposed upon one of his assistants.

A Tempting Offer from Middlebury College, Vermont, has led to the resignation of Forest Supervisor J. J. Fritz of the White Mountain Forest, who leaves to take up his new work on January 1. Mr. Fritz will manage a 30,000 acre forest tract donated to the college some years ago and will also fill teaching assignments during the college year. Ira T. Yarnall, formerly Supervisor of the Tusayan Forest, District 3, and who for the past three years has been assistant supervisor of the Pisgah Forest in North Carolina, will succeed Supervisor Fritz on the White Mountain. A change in the supervisorship of the Ozark Forest in Arkansas is also announced, Forest Ranger Henry R. Koen being promoted and assigned to the Ozark to succeed Mr. K.E. Kimball. Mr. Kimball left the Service on December 15 to engage in private work.

T. M. Talbott, National Forest Examiner from District 6, Headquarters at Portland, is on detail to District 7 for the purpose of producing a district law enforcement manual and in other ways stimulating the law enforcement activities on the eastern Forests.

DISTRICT 8 - ALASKA DISTRICT

From Alaska: Chas. T. Gardner, Supervisor of the Tongass for many years, has resigned to go into the logging business with Sawyer & McKay. Mr. Gardner will therefore still have considerable business on the National Forests. He will be located in Juneau. Mr. and Mrs. Gardner were in the States in October. Robt. A. Zeller succeeds Gardner at Ketchikan.

Louis King, fiscal agent, has transferred to D-2 on account of his health. He is succeeded by Paul F. Redlingshafer of D-1.

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THE TINKER TALLY SHEETS
By B. I. Shannon, D-3

The Bard of Avon wotted not of Forest Service methods when he opined that we "rather bear the ills we have than fly to those we know not of" - for the average Forest officer's avocation seems to be thinking up ways of "doing it different" from the orthodox manner.

In the Bulletin of November 20, Supervisor Tinker observes that "the records of the Rangers and Supervisors are not only inadequate but unwieldy, in spite of the pages of typewritten material gotten out annually." Then he proceeds to correct the situation by getting out another volume of instructions and forms. Apparently he figures that our records will be inadequate and unwieldy no matter how much typewritten matter is put out each year, therefore "another little drink won't do us any harm."

The average Forest officer will echo Mr. Tinker's complaint. Take the filing scheme, for instance; clerks included, they all complain that it is complex and almost impossible. What bothers me is, how did they find it out? There is usually little to indicate that many of them ever tried it out thoroughly. This is true, possibly in a less degree, of many other schemes that have been promulgated. When instructions are received on the Forest, or in the District office in case they emanate from Washington, they are usually accepted with the mental reservation "well, alright, that may fit some forests, but whatcha gonna do about a case like that on Squeedunk Hill?" Then the instructions are put into effect with a few modifications or embellishments to meet the "conditions peculiar to this forest." When the District office inspector happens around, the modifications are justified on the ground that "they worked," regardless of the fact that the original instructions might have worked just as well had they been given a try-out.

Mr. Tinker sets forth six paragraphs of advantages that will follow from his new plan, not to mention a sheaf of new ranger-notebook and letter-size forms. One of the advantages is the cutting "down of the amount of required field inspection." It seems to me this is just the reverse of the logical tendency, which should be to cut down on office work, reports, etc., in order to provide more time for field inspection. With this exception, the advantages given are also claimed practically in toto in the instructions and literature covering the Annual Working Plan and Monthly Plans of Work, which were issued by the Forester a year or so ago. These instructions, together with the filing scheme and manual, provide amply for the results Mr. Tinker claims for his scheme. Why not try 'em out? If the Rangers of Mr. Tinker's acquaintance are having the difficulties he enumerates in his articles, it is evident that they are not making a success of the Monthly Plan of Work idea. If tool box No. 4 needs a can of oil, if there are several special uses that should be reported upon in the near future, etc., why can not notebook memos of these facts be placed in the Monthly Plan file or folder as the need becomes known? Surely there will not be so many of them accumulate but what a Ranger can readily go through them and select the ones that can be attended to on a contemplated field trip. If upon inspection he finds that the Squaw Creek telephone line needs only a new bracket near the Thomas ranch, why shouldn't a simple notebook memo to that effect filed with his Monthly Plan of Work data bring the required results, rather than getting out a prepared list of "well thought out" inspection questions and answering all of them even though the answers may be largely "yes" or "no"? Why provide an elaborate method of doing something that is already amply provided for in a more simple way? Why burden the force with more forms and instructions when we already have more than we have time to get even slightly acquainted with? If a Supervisor goes to the file of a given permittee, or improvement project, or what not, and fails to find detailed memoranda or information as to the status of the case, is it necessarily the fault of the system? Even a Ford won't run unless some one winds it up.

FROM AN INSPECTOR'S NOTEBOOK

By E. E. Carter, Washington

We had been discussing sales work, especially marking, for nearly a week. We had been on four or five ranger districts, and had tried to point out what was wrong or what could be improved. We had learned a lot about local conditions, both silvicultural and economic, from the Rangers. We had tried especially to get the Rangers to see why certain marking was good under those conditions and why some was - well, not so good. It rarely was positively bad.

Then we came to a new district. The man on it was a local product, without special training. He and the Supervisor had a lot of grazing matters to thresh out as we went along. We looked over a sale, marked chiefly by a former Ranger, and found lots of room for improvement. We pointed out mistakes, and areas where things were right, and the Ranger listened gravely. We could not jump on him for another man's work, but we could try to give him some ideas about marking.

Then we went on to another sale handled wholly by this Ranger. Perhaps we were tired. Anyhow, there was no great enthusiasm on display while on the road. One glance at that sale area, however, and every man was on his toes. Here was a new standard of performance. Here was a sale area marked right. Of course we squabbled over individual border line trees, but that was all there was to squabble over. Oh such a grand and glorious feeling!

There was no mystery about it. This Ranger had absorbed the basic idea of leaving that patch of timber in the best possible condition for future growth, and then used his common sense and the silvicultural rudiments he had picked up from the Supervisor and members of his staff. He had used his marking hatchet with the dominant idea of leaving that stand in a growing condition. He did.

To keep Mr. Ranger from getting too chesty, there had to be a gnat, if not a fly, in the ointment. He had just finished telling us that he had had no trouble with the purchaser when we happened on a cut unmarked tree lying on the ground, and it was the right kind of tree to leave and badly needed in its place. It is a safe bet that that kind of contract violation has not occurred again on that sale.

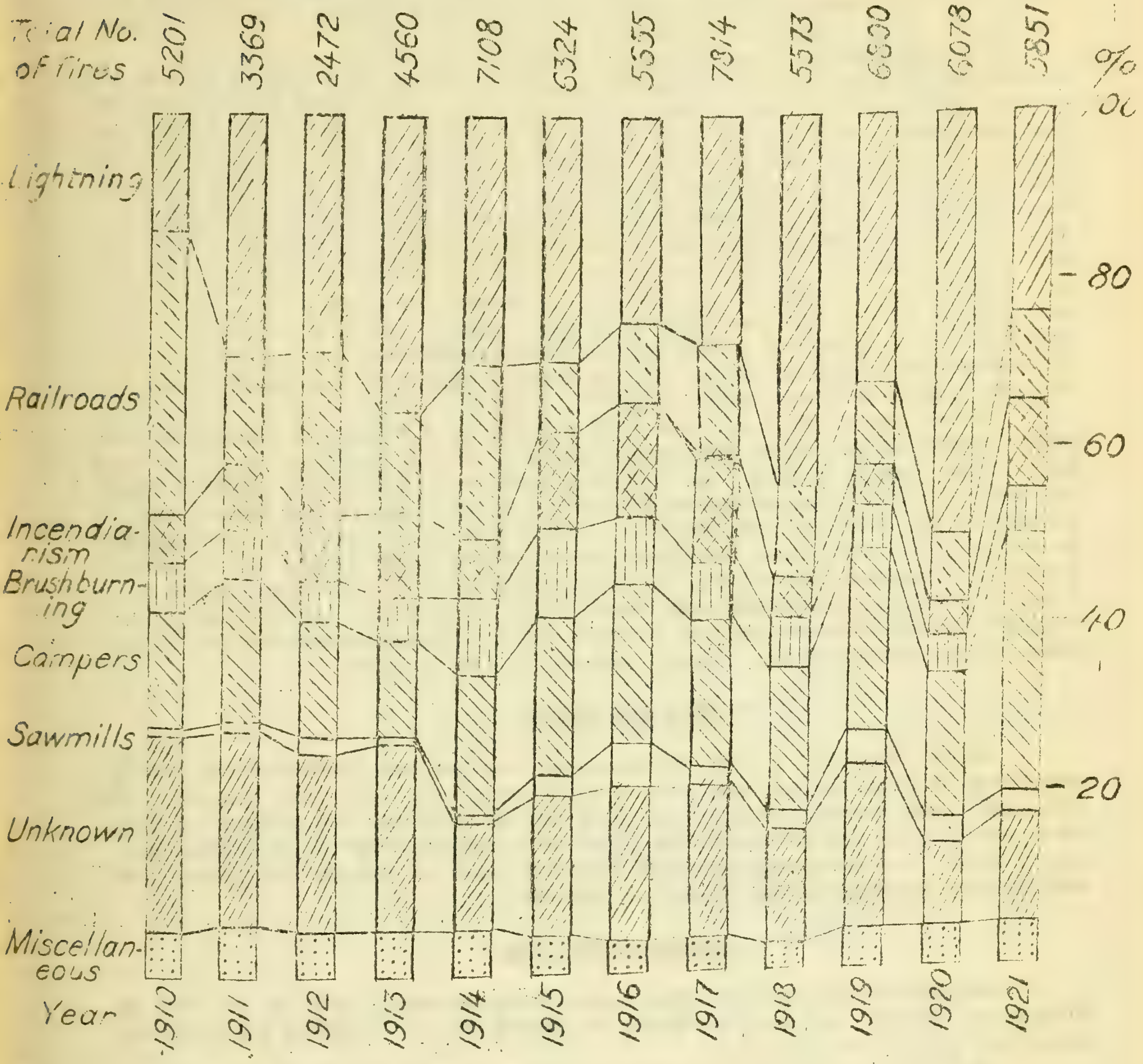
Can a Ranger be a forester? The ayes have it, unanimously.

WORKING PLANS

Ye of the field are not the only ones. The Forester, who has a certain way about him, suggested that if working plans were found on the virgin leaf that was turned over this New Year, he would be pleased, and if not, - - - - - . As a consequence, all branch offices have prepared complete plans for 1923. The Public Relations plan is the best one we have seen so far.--Ed.

NATIONAL FOREST FIRES

Per Cent of Total number of fires by causes



THE END OF THE PENCIL

Research on the Pencil Question

By R. H. Weidman, Priest River Exp. Sta.

One can not read Major Kelley's recent article in the Service Bulletin on the enormous distribution of lead pencils in the Forest Service without considerable astonishment. So stupendous a figure as 69,902 lead pencils used by 2,600 people per year - 27 pencils per person - seems indeed unbelievable. Doubtless the article led many readers, as it did me, to ponder for a moment on the possible reasons for such an enormous disposition of pencils.

Certainly a small but appreciable portion of this great quantity of pencils can be accounted for by accidental loss. It is a very common experience to have a pencil carried off unintentionally by another person. Perhaps

THE END OF THE PENCIL (Cont.)

we are illustrating a point on paper when the other borrows our pencil to amplify the point, and in the course of the discussion unconsciously places the pencil in his pocket. In my own experience of the last six months, I can distinctly recall three pencils about half used which were taken in this way. By the use of a little pleasantry, I recovered two before it was too late; the other got away despite my usual habit of observation in such things. I believe it would be conservative to estimate that at least two pencils per person are lost each year in this way.

The thought which strikes me most forcefully, however, is that a very considerable portion of the pencils issued can be accounted for by absolute waste. The standard wooden lead pencil contains seven inches of lead. Most persons do not use a pencil holder and as a result they use only about four inches of this lead and throw the remainder into the waste basket. To use the pencil without a holder when it is less than two and a half or three inches long is to use it with difficulty and inefficiently. By the use of the pencil holder supplied from Forest Service stock, it is possible to use all but one inch of lead. Thus by not using the holder two inches of lead are wasted per person. At 27 pencils per person, 54 inches of lead or 7.7 pencils per person are wasted in this way. Major Kelley's query as to what each of us can do toward reducing this waste might well be answered with the advice that each of us use pencil holders when our pencils get down to two and a half or three inches long.

It is interesting to note that a waste of 7.7 pencils per capita per year amounts to the quite impressive total of 20,020 pencils, or 28 per cent of all the pencils issued. If we assume now that half of the pencils which are lost through being taken unconsciously by visitors to our desks, are taken by people outside the Forest Service, the total loss and waste amounts to 8.7 pencils per person or approximately 32 per cent of all the pencils. In this way goes a part of the 27 pencils per person. Assuming that 6 to 8 pencils represents an adequate number for actual use - and in this Major Kelley's estimate seems liberal - there still remain unaccounted for 10 pencils per person per year. Where, indeed, go the pencils?

STOP THE FIGHT!

To end the lead pencil controversy, the Madison Laboratory is hereby requested to discover an easy method of removing the lead from pencils. This will make lead pencils useless and thus not only effect the economy so dear to Major Kelley, but cut down the paper work lamented by the anonymous Bulletin poet. The reclaimed graphite could be used to smooth the future for our amateur economists and poets.--Querulous.

Requiescat in Pace

The Editor has watched this controversy alertly, keen to see that no bitterness should crop out, as it is so apt to do when weighty subjects and brilliant minds come together.

The subject is closed forever. And yet, as we lay it to rest, we can not but feel that injustice has been done and that they have merely scratched the surface. We refer to the skads of paper on which the pencils were used.

WASHINGTON NOTES

In the Service Bulletin of October 16 we ran an article without credit being given the author. The article was "Hidden Bole Injuries Caused by Fire," and the author was H. G. Lachmund of the Office of Forest Pathology, Bureau of Plant Industry, San Francisco. We apologize.

Mr. George H. Lautz, Assistant Chief Engineer, left on January 2 to make the rounds of the Districts and discuss with them all engineering work, particularly maps and surveys. This trip is expected to cover a period of six weeks.

WASHINGTON NOTES (Cont.)

Santa Claus paid a visit to the members of the Washington Office and their families and distributed presents to the youngsters and a few oldsters like a young spendthrift.

The presentation was made in the Sunday School room of the First Congregational Church. He got stuck in the chimney and dropped his pack, but nothing was injured. Santa explained that if he kept on eating, and Christmas kept on coming, they'd have to have a bigger chimney next time. Below is his note of thanks blown to the Editor on the Christmas winds.

"To all who contributed so much to the success of the annual Christmas festivities of the Service, Santa Claus wants to return thanks and deep appreciation of their efforts to make this year's program more interesting and satisfying than ever before. To the ladies who made purchases, helped dress the tree and distribute the presents at the tree; to the sweet singers who helped so much with their voices, and to the rest of the bunch who contributed their time and labor in erecting the platform and carrying out all the real hard work of the job, the sincere thanks of everybody interested in the affair are due.--Santa Claus."

FOREST PRODUCTS LABORATORY

President Harding Favors Research: A paragraph from the President's recent special message to Congress is of interest.

"There is, however, another field of government - a rapidly broadening field of government expenditure - which may be discussed with profit to us all. I refer to expenditures which are being made from appropriations for Federal aid in lines of research, improvement, and development which, while having no direct connection with the operations of the business of government, have grown to become a recognized part of its activities. The extraneous activities have flowed from the laws enacted pursuant to popular demand, and I take this occasion to refer to them for the purpose of showing that the taxation which necessarily results in providing funds to meet them is a necessary incident to the fulfillment of the popular demand."

It will be recalled that the Chamber of Commerce of the United States estimates that American industry is spending $70,000,000 annually on scientific research.

Keeping Fit at the Laboratory: That the need for some form of physical exercise is realized at the Laboratory is indicated by the number of those interested in the various kinds of physical development.

The most popular form is bowling to which an average of 40 men and 10 girls devote two hours each Friday. The Forest Service has been represented on the local alleys for a number of years, and includes some of the best bowlers in Madison.

At the city Y. M. C. A., almost a dozen men gather twice a week for a strenuous round of exercises topped off by several games or so of volley ball, basket ball, or indoor baseball.

The Laboratory is also represented in a city basket ball league by a five which can be selected from a dozen or so players, a number of whom have played on college teams.

Another form of exercise is pitching horseshoes, which is represented by a number of participants - their standing is indicated by the 14 games won out of 18 played thus far with other leading Madison teams.

DISTRICT 1 - NORTHERN DISTRICT

Damage to Yellow Pine by the Mountain Pine Beetle: A rather interesting check has been made on the extent of damage to yellow pine by the mountain pine beetle in the Big Blackfoot drainage near Missoula. The A. C. M. Co. has recently had a second cruise made on a large area of their holdings in this region. Part of these lands had been previously cruised in 1902 by the same cruiser who had charge of the second cruise. 5,280 acres in various sized tracts were selected from four townships for comparison. These selections were made because the 1902 estimate on them was known to be reliable. The areas selected are representative of about four townships. The net loss in twenty years, as shown by the new estimate, averages 26 per cent. Only two tracts out of all those selected show any increase in volume since 1902.- E.K.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Delta County Livestock Meeting: On June 3, the District Forester attended the annual meeting of the Delta County Livestock Association of which State Senator Rockwell is president. There has been considerable antagonism toward the Service among the members of this association during the past year on account of the alleged neglect by the Service of the recommendations of the Advisory Board of this association, and of the smaller associations affiliated with it. Opportunity was given in the committee meetings for various members to air their views, and it is believed a pretty good understanding was arrived at without any unpleasantness on the floor of the meeting. A resolution was, however, passed to the effect that the local Forest officers and the District Office had failed to cooperate with the Advisory Board in Delta County and that this failure should be brought to the attention of the State representative in Congress. The whole difficulty arose from our action in certain trespass cases which were handled, as usual, without being referred to the Advisory Board for their suggestions. Since men prominent locally were involved, the matter immediately became one of importance to the association.

Other resolutions passed by the Delta County Association endorsed the splitting of grazing fees, and requested that this plan be made permanent; opposed the transfer of the Forest Service to the Department of the Interior; and urged that sheep grazing be prohibited on the elk range on the Gunnison Forest on the north fork of the Gunnison River.

The Supervisors' Meeting will be held in Denver from February 5 to 10. Supervisors only will be in attendance. In addition to the discussion by the Supervisors and other members of the Service, talks will be made by J. W. Johnson, District Engineer of the Bureau of Public Roads, Major Blauvelt, State Highway Engineer of the State of Colorado. W. J. Morrill, Colorado State Forester, and Lou. D. Sweet, President of the Colorado State Forestry Association. Some representative to be chosen from a local lumber concern will also discuss the relation of the National Forests to-day to the lumber industry.

Planting on Minnesota National Forest: A total of 800 acres was planted on the Minnesota Forest during the month of October at an average cost of $4.47 per acre. Two and three-year seedlings and transplants, all Norway pine, were used. The two-year seedlings formed the largest plantation of 540 acres which cost only $3.90 per acre.

The past season was the driest growing season that has been experienced in Minnesota for many years. This culminated in the disastrous fires throughout the northern part of the State from August to October. Consequently, the survivals in the plantations established last fall and spring are below the average, but none of them are absolute failures.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Recognizance: Perhaps it's a new Forest Service activity. A local item in a newspaper published in D-3 says that, "- - - a member of the United States Forest Service's recognizance party has left the Service temporarily - - -."

The Forest Service Blaze: Supervisor Winn of the Gila, in an initialed brief tribute to former Supervisor Goddard of the Tonto, in the Gila Bulletin, concludes with "He has now taken the last long trail (blazed to the last with the Forest Service blaze)." It is doubtful whether words may be found that can be made to express a finer tribute to a man's official career than to say that the trail he traveled was "blazed to the last with the Forest Service blaze."

Comforting: The following is an extract from a letter received from a permittee on the Chevalon District who has been a Forest user for many moons, in reply to our letter notifying him of a meeting at Winslow:

"I will be unable to attend, but I still have my old time faith in the Forest Service. I feel that the Service will not do anything but what seems best for all parties concerned, so I will abide by what you determine as best action to take.

Busy Men: Clipping of a local item from Magdalena news says "Supervisor Douglas of the Datil National Forest was in town the last of the week on official business." In these days of heavy field travel it seems to be gratifying to catch a Supervisor in his office even occasionally.

One More Item for the Cantina: A county agent in a Missouri county attached to his automobile a model poultry house recommended by the State college of agriculture and carried it with him for several months on his demonstration trips. Special demonstrations were given at fourteen community fairs, and as a result twenty-one new poultry houses are under construction and twenty-seven were remodeled during the year.

Heaven forbid that exhibit materials may be added to the already bulging cantina, but the success the county agent achieved is another indication of what may be expected from concentration on important things in opposition to scattered efforts.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Murder Will Out: It has just come to light that the Assistant to the Solicitor gave a practical demonstration last summer of how to keep out of the clutches of the law, and it was while he was attending a guard training camp for the purpose of demonstrating how to make the arms of the law clutch. Rumor has it this way:

He was using a certain Ranger's car of common make and drove into a certain town whose main street is several per cent from being level. As he swung over toward the sidewalk, he applied the brake, but to little avail. By mental and physical contortions he stopped his vehicle, but not until he had gently bunted another vehicle of the same common make, and started it down the street minus a driver. In due course of time it was stopped by a lumber wagon loaded with women and children, while its owner raced out from a garment store shouting and waving his hands and uttering accusations. And here is where the master hand came in: It is claimed that he proved that since neither vehicle had any marks or abrasions showing physical contact, there must have been a very slight earthquake, and even the people in the wagon testified to the shock. He and the Ranger then returned to the training camp.

Forest Service Telephone Line Tapped: Last year Hugh Smith and his daughter Hula connected their ranch to the Forest Service line on the Teton. They refused to remove their telephone and dared any Forest officer to enter the premises. The matter was turned over to the Department of Justice, and yesterday a letter was received by the Assistant to the Solicitor from the United States Attorney at Cheyenne to the effect that on August 24, 1922, a suit had been filed in equity in the Federal court seeking to enjoin continuance of the trespass.

DISTRICT 5 - CALIFORNIA DISTRICT

Timber Cruisers Return to Civilization: Bronzed by sun and wind, blessed with enormous appetites and presenting the very picture of health, thirteen Forest Service timber cruisers who have been working in the woods since last April returned to civilization yesterday. Under the direction of Forest Examiner O. M. Evans of the San Francisco forestry headquarters, the party cruised and mapped 93,400 acres in the California, Plumas and Stanislaus National Forests, containing over 1,000,000,000 board feet of lumber. The purpose of the work was to obtain estimates and maps of logging chances on which future sales of Government timber can be made. Cruising was done according to the latest improved Forest Service methods of timber survey, in which the diameter and height of 10 per cent of the standing trees are measured on regularly laid out strips running through the forest. Map data were also secured with Abney hand levels and chained distances.

"We had a wonderful trip and lots of hard work," said Mr. Evans. "The boys of our crew were a specially fine bunch of men, being forest students recruited from the State universities of California, Washington, Montana and Minnesota, the Oregon Agricultural College and the Forest School of Syracuse

DISTRICT 5 (Cont.)

Timber Cruisers Return to Civilization (Cont.)

University, N. Y. We traveled with a pack train of five mules when on one job and moved from Forest to Forest by motor truck. A real old-timer cook furnished the gastronomical features so essential to outdoor life, while the mules supplied the music and incentive for our morning 'setting up' exercises."

We've Got 'Em On Our List: Ten cases from the Klamath National Forest were submitted to the United States Attorney on December 1 by Assistant to the Solicitor H. P. Dechant. Three of these cases involve violations of Section 52 for wilfully setting fire, four involve a violation of Regulation T-1 (E) for building a camp fire without a permit, one covers a violation of Regulation T-7 for killing a bear out of season, and one covers the larceny of Government property. All these were criminal cases. The tenth case involves an injunction to restrain grazing trespass. (From the Weekly News Letter D-5 of December 8.)

DISTRICT 6 - NORTH PACIFIC DISTRICT

Let the Law Take Its Course: Comes now P. A Thompson, Fire Assistant on the Malheur, and requests District 6 to show cause why he should not be considered the best big game hunter in the plumb entire Forest Service. He sets forth as his reason, to wit: Grant County produces the biggest deer in the United States. Said P. A. Thompson won first prize, a powerful rifle offered by the Grant County Mercantile Company for the "largest spread" killed in Grant County in 1922. In fact, the largest spread recorded in Grant County for any year was this spread.

Said buck was Supr. C. C. Reid's especially trained, especially tamed buck ranging on Murderers Creek, where he was used last February in making State game motion picture films. Said Supervisor represents that this buck posed for a picture in all his proud beauty and was shot down in cold blood in premeditation and malice aforethought by a gun in the hands of said Thompson with intent to wound, cripple, injure, slay, and kill against the peace and dignity of Murderers Creek, Malheur National Forest, so help me God!.

The Big Show: The great indoor sport of fighting fires on paper is the chief diversion in the Rainier office these days. What with the "A-to-Izzard" Fire Report, the D-6 Statistical Fire Summary, the Form 926 Fire Report, and so on ad infinitum, we are reminded of the pup who concluded that he had been blessed with fleas so that he would forget his other troubles. Jostling "Fire" for the center of the stage, we find Grazing "Re-co-nuisance"; while the wings are impatiently crowded by other acts anxious for their turn, - Property Inventory, famous juggler of pots, pans, and kettles; Annual Statistics, the mental marvel; Roads and Trails, with some new fancy steps; and numerous other minor stars.

An Edible Insect: The Colorado Pandora Moth has tired of the yellow pine on the Klamath Indian Reservation and has moved westward into the north end of the Crater Forest. Thousands of the moth were flying in July and August in the yellow pine in the Fort Klamath vicinity, where they were busily laying eggs on the yellow pine needles. The caterpillars which hatched this summer will be edible pupae in 1924 - at least the Klamath Indians think they are good eating. On the Reservation these insects have defoliated many thousands of acres of yellow pine, but so far but little timber has been killed by them.--A.J.J.

Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

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MUNICIPAL CAMPS

By L. F. Kneipp, Washington

Lou Barrett, genial Chief of Lands in District Five, plays by ear the entire Recreation symphony, from Aviation to Water Sports, but his pet selection is Municipal Camps and municipal cooperation in camp ground improvement. To him, the day that passes without the initiation of a new municipal camp project or a substantial donation by some thriving metropolis to the improvement of a Forest camp ground, is a total loss. Last spring he added the city of Stockton to the bright galaxy, and last fall the manager of the camp told the playground commission what he thought of the season's work. Some parts of his report are as follows:

> A noteworthy thing has been happening the past few years in Stockton and all over our country. Business men and women are discovering a new continuing element in life - or rather, a new application of an old element. The element of play or a "good time."
>
> Members of the Stockton Playground and Recreation Commission have been proclaiming persistently the importance and necessity in life of recreation and play for the adult as well as the child and have been steadily and gradually creating more opportunities for the leisure time of the citizen.
>
> The Municipal Camp has been a new municipal enterprise and was received with splendid enthusiasm throughout the summer. Stockton's Recreation Camp at Silver Lake, on the scenic Alpine Highway, 100 miles from Stockton, was dedicated July 29, 1922, to the future health and enjoyment of the people of Stockton.
>
> The Mayor and the City Fathers are to be congratulated on their progressive action in making possible this great outdoor institution - a Municipal Camp - which is not a luxury but a necessary part of education and life. These men realize that in making it easy for people to go to the mountains and enjoy the pure air and sunshine and glorious scenery of God's out-of-doors, they and their coworkers are making it easier for the people to be more useful citizens.
>
> John Muir has well put this thought, "Christianity and Mountainanity are streams from the same fountain."
>
> One object of the camp was to provide the people of Stockton an opportunity for a two weeks' vacation in the health-giving atmosphere of the High Sierras at a minimum cost. A two weeks' outing including Board, Lodging and Transportation to and from Camp was provided for $25.00.
>
> Stockton's Municipal Camp was a real democratic camp, a large community home with a wonderful camp spirit. In reality the camp was a little world, but the folks at camp learned a heap that will serve them in the big world.
>
> From the hundreds of expressions of enthusiastic campers the need for just such a camp is apparent. For some, camp was a place for rest, sleep, regular habits and the joy of living. For the more ambitious, there was the "joy of cold water, strong winds, long roads, brown earth, open fires, friends on the hike, swimming, rowing, the trail up the mountain and round the lake."

MUNICIPAL CAMPS (Cont.)

The city of Stockton is grateful to the United States Forest Service for permitting the citizens to have a Municipal Camp in the El Dorado National Forest and the Camp Management tried at all times to observe the rules, regulations and laws as laid down by the Forest Service Department. The splendid cooperation of the Government's representatives, Edwin F. Smith, the Forest Supervisor, El Dorado National Forest, and Ranger J. W. Hughes, was of material assistance in starting the Municipal Camp. Their suggestions and advice were always very constructive and valuable. It is indeed a great privilege for the people of California to obtain tracts of land in the National Forest for recreation purposes, and the citizens at the Stockton Municipal Camp were indeed very appreciative and tried to carry out the Government's policy.

DEMONSTRATION FORESTS

By C. G. Bates, Fremont Exp. Station

In "Applied Forestry Notes" for December (the Research publication of District 1), R. H. Weidman, Director of the Priest River Experiment Station, makes the altogether unwarranted claim that his "Station is unique compared with the other experiment stations of the Forest Service in that it possesses an experimental forest."

The Fremont Experiment Station has a demonstration or experimental forest - has had it since 1909, though, like many another good thing, the making of a coordinated plan for it has had to be put off until recently, when a good beginning has been made by Forest Examiner Roeser. This Forest is only 160 acres in extent, but its size is quite in keeping with my personal preference for small and very intensive experimental areas. The whole comprises a neat natural logging unit, drained by three streams, and all tributary to the Station wood pile. Cutting on the area is done almost entirely for fuel, although incidentally some railroad ties have been made. As this cutting is done by Forest officers the work may be carried out in an ideal manner, safeguarding an ideal plan and ideal marking. Within the area, the unit is an acre. Every operation in any manner affecting the forest conditions of an acre will eventually be a part of the record of that acre. Also, as soon as any acre is reached for cutting, it is expected to start an individual growth record of every tree. Of course, this recording and mapping takes time, but otherwise the intensive management will cost very little. Forestation experiments can usually be located on areas which have not reproduced naturally, or where, because of serious disease infections, clear cutting is desirable.

The fuel demands of the Station require the cleaning up of four or five acres annually, each being left, as nearly as present knowledge permits, in perfect silvicultural condition. Thus the 160 acres will be cut over in 35 to 40 years. Meanwhile the areas which have been put in good condition should serve visiting Forest officers as an inspiring example of the goals toward which all management should be directed - thorough utilization, elimination of disease, certain natural reproduction or immediate replanting, and sustained yield. To my mind, the experimental forest serves also a very useful purpose within the Research organization by permitting the wildest of theories to be put to practical test, if only on a small scale.

SOME OBJECTIONS TO OBJECTIVES

By C. M. Granger, D-2

Locke, in a recent book, speaks through one of his characters thus:

"In England you keep your ideals hidden until some great catastrophe happens, then you bring them out to help you along. Otherwise it is immodest to expose them. In Russia ideals are exposed all the time, so that when the time for their application comes they're worn so thin they're useless."

SOME OBJECTIONS TO OBJECTIVES (Cont.)

In the Service to-day there is a restless urge to set down our objectives - major objectives and minor, Service objectives and District, Forest, Ranger District and personal objectives. We must know the precise port we are heading for so that we may lay our course and stock our hold accordingly.

What do we mean by all these terms - major objectives, minor objectives, Service, District and Forest objectives? What do we mean by "limited" objectives, by "jobs?" One man talks of minor objectives and visualizes the same thing that another calls jobs. It is much like the fog that envelopes the use of our "standards" and "guides."

But this confusion causes me no great alarm. It will right itself, and we will come out of the fog with a list of perfectly tangible, understandable jobs that we want to get done. Speed that day!

There is one tendency that does arouse many misgivings - the apparent desire to set down in one, two, three order the great major objectives of the Service, which I translate as the Service ideals. There seems to be a feeling that, after seventeen years, we must now catalogue the big things for which the Service is working, that all who run may read. Do we really want to do this? Do we want to reduce to print the big visions which created the Service and held it together and vastly developed it in face of open and secret opposition? Are there not certain great goals toward which we are striving which are too obvious, too much now a matter of tradition, to need writing down? Do we not all of us instinctively know for what fundamental things we - the Service - are striving, and is not the binding strength of those things far greater unwritten? Is there not danger of wearing them thin and even of making them ridiculous by placing them categorically before each man in print?

The strength of the Service is in its ideals. We want each newcomer to know those ideals and each older member to work toward them undeviatingly. But let the new man get them by contact, by seeing his mentor do each job well. A job well done is the surest proof of a sound ideal. We do not parade our own personal ideals - we hold them too closely in our hearts for that. Why, then, should we parade our Service ideals, which are nothing more nor less than the collective ideals of the Service men and women?

Let us set down the many jobs we have got to do, and then do them. But let us not Russianize our ideals.

BIG AND LITTLE CATTLEMEN

By Ernest Winkler, Washington

A recent letter from Senator Borah of Idaho indicates that he has received considerable criticism to the effect that the large outfits are crowding the small outfits out of the National Forest ranges in his State.

The following shows the percentage increase and decrease in the number of individual permittees by grades and number of stock controlled by the respective grades for the period 1916 to 1921 in Idaho:

Cattle

Grade	Number of permits per cent	Number stock per cent
1 to 40 head	9.5 inc.	11 inc.
41 " 100 "	16.5 "	18.8 "
101 " 200 "	9.5 "	13 decr.
Over 200 "	5 decr.	10 "

Sheep

1 to 1000 head	70 inc.	45.9 inc.
1001 " 2500 "	39 "	01.7+ decr.
2501 " 4000 "	27 decr.	25 "
Over 4000 "	44 "	42.4 "

BIG AND LITTLE CATTLEMEN (Cont.)

For the six-year period there has been a marked increase in the number of small owners in Idaho and the number of stock controlled by them. On the other hand, the opposite is true of the larger owners.

These figures do not indicate that our policy has been favoring the large owners as is often charged.

PITY THE POOR CHINESE

It seems like a far cry from the abundance of our timber supply to the absolute denudation of China. The following interesting excerpt is from a letter just received from W. C. Lowdermilk, formerly investigative officer in District 1 and now teaching forestry at the University of Nanking:

"As one might suspect, the Chinese type of civilization has not made provision for forest perpetuation. The forest cover on the hills has been repeatedly removed and at the present time forests are not permitted to regain their place, because the grass and every other vegetative cover is annually cut - literally shaved off - bound into bundles and carried by coolies into the city for fuel. This grass fuel is used for cooking only. Fuel for heating is practically unknown among the Chinese. Thus is home life and comfort curtailed by the absence of sufficient fuel, not to mention the absence of a sufficient supply of wood for the needs of industry and dwellings. The shortage of wood has its baneful effects upon all the people."

COST OF STEEL LOOKOUT TOWERS

By E. W. Kelley, Washington

The figures given in the following table may be of interest to prospective purchasers of steel towers. The difference between prices as quoted by one company of single towers of given heights and lot purchases of similar towers is striking. It argues strongly for consolidated District or Forest purchases as far as practicable.

	Lots			
Description of tower	1	5	15	30 or more
30 ft. tower	$600	$420	$343	$314
45 " "	790	525	428	389
60 " "	1040	640	516	468
80 " "	1200	760	626	563

WASHINGTON NOTES

The Civil Service Commission has been requested to hold the Forest Assistant and Grazing Assistant examinations on March 13-14 and 15-16, respectively. This notice is given at this time so as to allow any members of the Service planning on taking either to have ample time for preparation.

By having one examination follow immediately after the other, it is thought that it will make it more readily possible for those who have to travel to a place of examination to take both if they desire.

Inspector Kelleter began the New Year by leaving Washington for a two months' visit to the Western Districts and the Madison Laboratory. P. R. supplied him before leaving with a sheaf of interviews in which are delicately twined various forceful thoughts. We expect he will make good use of them.

The Timber Crop Report is practically finished, and if one can judge by the effect it has produced on those who worked so hard to complete it, it is exhaustive. Eight of them are home recuperating.

Mr. Dort arrived in Washington January 2 from Juneau and Ketchikan, Alaska. He has been studying the water power resources of southeastern Alaska, having spent the field seasons of 1921 and 1922 on this work. We hope for an article for the Bulletin from him in the near future.

FOREST PRODUCTS LABORATORY

The Cruise of the "LUIZA": A piece of wood, a white oak pipe stave, sent the Laboratory recently by [illegible] has a history as interesting as any wood sample we have had in many months. This stave was one of a cargo shipped to Portugal from Mobile, Alabama, by a Georgia hardwoods manufacturer. When the staves were shipped they were apparently in first class shape, but about a year later when examined in a warehouse in Lisbon they were found so badly infected by fungi that they were useless for tight cooperage purposes. Between the time of shipment and reaching their destination, however, there elapsed eleven months - and thereby hangs a story:

"The schooner 'LUIZA' sank at her berth at Mobile while loading staves in January, 1920. The vessel was raised, the staves removed, the damages repaired, the staves reloaded, and she finally sailed from Mobile February 4. On February 11 she put into Havana in distress and, after remaining there until April 20 for temporary repairs, started back to Mobile for permanent ones. She went aground outside of Mobile but was towed into port on May 6. At Mobile the staves remained in the vessel for about a month and then, on June 9, the cargo of staves was removed and she went to the ways for repairs. The staves were placed in storage, and at that time our Mobile agent wrote us that the staves 'were moldy but otherwise all right.' On September 15 the "LUIZA" again left from Mobile, and finally on November 18, 1920, she arrived off Lisbon with six feet of water in her hold."

Progress in Mine Timber Utilization: Mine timber utilization and mine timber preservation have received more attention during the past 12 months than for many years. This is partly due to mounting costs of material, and partly because of the efforts of the Forest Service and the Bureau of Mines to interest mine owners in timber preservation. The need for preservation is easily recognized. A thorough study of timber purchase, storage, and use at any large mining operation can scarcely fail to convince anyone that considerable savings are possible in timbering costs. Sufficient experiments have now been made to show definitely how to select, store, treat, and use timber satisfactorily, and all the operator needs to do is to acquaint himself with what is known now, and to make the best use of this knowledge by applying it to his local conditions.

The activity of agents selling preservatives is responsible for some of the increase in the use of treated material. Many of the preservatives sold are good, and, if properly used, bring excellent returns on the investment. Others are not so desirable, or more frequently are good preservatives but are improperly used. It is hard at times to convince users that under practically all conditions thorough methods of treatment are best.

A difficulty in the way of more extensive use of treated material is that open-tank treating equipment is not available in stock sizes and designs, like other mining machinery. The apparatus is very simple and easily designed, however, and this need not deter anyone. The fact that it is so simple and is not patentable, as well as because it is in little demand, has no doubt made the matter of little interest to equipment manufacturers. It is hoped, however, that something can be done toward making ready-made equipment available.

On the whole the progress in mine timber preservation during 1922 has been quite satisfactory, and a good groundwork has been laid for much more rapid progress in the future.

DISTRICT 1 - NORTHERN DISTRICT

Mr. R. P. McLaughlin, State Forester of Montana, is out for a number of changes in the Montana Forest Law this winter. The timber sale procedure as outlined by law, he thinks, is cumbersome and indirect. The law says only "timber which is over eight inches in diameter, 20 feet from the ground" should be cut. "This should be repealed," says Mr. McLaughlin, since no one but Paul Bunyan can execute such a law."

Changes in laws relative to slash disposal, brush burning, and various phases of State Forestry work will be sought from the coming legislature.

Carhart Resigns: Arthur H. Carhart, the first and only Recreation Engineer of the Forest Service, engaged exclusively upon National Forests, has decided to hang out a private shingle and start a business of his own simultaneously with the New Year.

Though never responsible to "Research," he has often been referred to as a Service Experiment. In the four years he has been employed, he has demonstrated there is a field for the trained landscape architect, a definite need for the systematic planning of recreation development. The experiment has been concluded, but the full results can not yet be announced. This much is certain, - he has justified the expenditure made on the experiment and has left behind accomplishment which will be invaluable to the Forest forces in carrying the responsibilities of the activity. The Forest Service extends genuine Good Wishes for a Prosperous New Year.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Train of Lambs: The Hubbell lambs, numbering 13,314, many of which were grown on the Datil National Forest, were recently shipped from Magdalena. They made a train of 67 cars, the longest train that has left Magdalena. They were destined for Colorado points.

Tonto Move: Supervisor T. T. Swift of the Crook has accepted the supervisorship of the Tonto as successor to the late W. H. Goddard, and the headquarters will be moved from Roosevelt to Phoenix. The actual date move is to be made has been left with Supervisor Swift. Successor to Swift on the Crook has not been named.

Old Timer Invading Alaska: The Survey, the news letter of the Biological Survey, announces that J. Stokley Ligon, Government Hunter, who was quite well-known throughout the Southwest, is organizing and prosecuting a wolf campaign in Alaska. Ligon reports that climatic and soil conditions make work in Alaska quite different from that in the rest of the United States.

With Every Success a Sacrifice: Mr. Rex King was the subject of a rather peculiar accident last week. While working at his desk surrounded by range appraisal data, it suddenly caved in on him and it was several hours before he could be extricated. He was somewhat bruised by an accessibility map falling across him and barely escaped suffocation from a heavy investment in water development.

Marking in Western Yellow Pine: Here is a situation that confronted a certain forest officer in Arizona and what he made out of it:- Area, 600 acres. Net stand of timber after 25 per cent deduction for defect (determined by actual scale), 2,245,121 feet B.M. Stand, overmature. Mistletoe infection, bad. In handling the job there was left 968 board feet per acre. This is 25.6 per cent of the original stand. The number of trees 6" in diameter and up that were left made an average of 13 per acre. Seed trees above 20" in diameter made an average of 1.04 per acre. There were 30 seedlings and saplings per acre. This was a difficult area to mark. Preferably a larger number of seed trees, which would mean a bigger volume per acre, should have been left.

Says a Cattleman: Mr. Victor Culberson, of the GOS Cattle Company on the Gila, remarks in an interview printed in the El Paso Herald, in which he draws parallels between the drouths of 1904 and 1922 and predicts a promising outlook just ahead, "range management will be practiced more assiduously and scientifically than at any previous time in the annals of the industry. Pastures will be universally fenced and overstocking will be avoided." Expressions have a ring as though from a familiar vocabulary.

Now in Operation: The smoke-treating plant of the Clarkdale smelter of the United Verde Copper Company, near the Prescott, has been started. About two years were used in the construction, and the cost is $1,100,000. By an electrical process, 95 to 98 per cent of the solid matter is removed from the smelter smoke. This is the first smelter smoke-treating plant to be built in Arizona and it is said that there are only a few in the world. Practically all forms of vegetation for considerable distances around have been destroyed or badly damaged by the gaseous smokes from the Clarkdale smelter in the past.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Dr. Frank A. Waugh Feted: During Dr. Waugh's recent visit to this Forest he came in contact with a large number of representative citizens. He was given a room at the University Club and later a banquet.

The Commercial Club escorted him over the Alpine Drive.

He was given a luncheon at the Alta Club and was taken by the Rotary Club to visit Rotary Grove in City Creek Canyon.

The Kiwanis Club put on a wood-sawing contest in Big Cottonwood Canyon and took moving pictures of the event in which Dr. Waugh took a leading part. These pictures were shown the following Sunday at the Pantages, and Dr. Waugh had an opportunity to see himself in action. The Mayor of Salt Lake made a special trip to greet Dr. Waugh at this event.

The State Engineers gave a banquet in his honor at which the Mayor and the Governor gave talks.

The Rotary Club took Dr. Waugh to their weekly luncheon.

Bonfires in his honor were given at the Community Camp and at Mutual Dell in American Fork Canyon.

The staff doctors of one of the local hospitals met with him and promised to do their part in establishing a health camp the coming season.

Griefs of the Livestock Men: Stockmen on the Mayhill District of the Lincoln recently gathered their cattle for shipment and then had to turn them loose because the railroad company was unable to furnish cars.

Do You Believe This? Frank Wood, an old-time trapper, who lives in Jackson, and each season takes $400.00 or $500.00 worth of marten, coyote and miscellaneous furs almost within the city limits, has made some interesting observations on the destruction of blue grouse by weasels. Evidence in the snow of blue grouse having been killed by weasels where there was no visible signs of the attack, the only signs being such as to indicate the end of the struggle, aroused his curiosity, and an investigation of several cases indicated that the grouse are attacked in their natural habitat high up on a hillside, and are able to rise and fly away with the attacking weasel, but unable to escape, since the weasel apparently continues the attack while being borne through the air, eventually bringing the grouse down where the end of the struggle as noted, is plainly shown in the snow.

DISTRICT 5 - CALIFORNIA DISTRICT

An Office Visitor: We had a call on August 24 from Mr. Leroy Jeffers, of New York City, Secretary of the Associated Mountaineering Clubs of North America. This bureau comprises 50 clubs and societies, having in addition to outdoor and mountaineering activities a common interest in the creation, development and protection of National Parks and National Forests. We furnished Mr. Jeffers with prints of a large number of our best scenic pictures of the National Forests of this District, and these will be incorporated into the collection which the bureau maintains for the benefit of the public in New York City.

Sierra: This past season a party of State Foresters, fifteen in party from several eastern States, visited the Signal Peak Lookout, and from the questions asked they were greatly interested in the work. In the party was a French lady whose father is a forester in France. She seemed very much interested in the work and asked many questions regarding the methods of handling fires in our Forests, all of which were answered in an able manner by the District Ranger, Mal McCleod, who met the party there.

Nothing Gets by These Stanislaus Birds: A Duplex truck used by the Berkeley Municipal Camp to haul people to their camp grounds took fire in some unexplained manner and was completely destroyed. Here is the report: "Smith Peak reported fire at 10 A.M., Grover Lyons, garageman at Buck Meadows, at 10:05, and Duckwall Lookout at 10.09." Snappy work!

"Look Before You Leap": At three o'clock in the morning recently, George Cory was awakened by what he thought was a wood rat gnawing. Cory jumped out of bed, intending to scare the intruder away. Before landing on the floor, however, his feet hit a porcupine. A pair of pliers and a large quantity of iodine were used to administer first aid. Cory has sworn to look before he leaps hereafter.--Shasta.

Picnic For the Fire: Little Bobbie (age 5) was in town and saw the Willows transfer truck loading up with provisions for the fire fighters at Alder Springs. When he came home he said:

"Mother, do you know what I saw to-day? The picnic for the fire. I saw them loadin'."

His Price is "Above Rubies": A professional man well known in San Francisco recently left his camp fire burning near Dutch Flat, Placer County. Now there is nothing that riles Guard Trousdale and Ranger Hurst more than this same practice, and they just naturally hauled the gentleman before a justice and experienced the satisfaction of having him fined $50. The 618-b concludes thus: "Dr. ----- was very anxious to avoid appearing in court, and through a friend of his made an indirect offer to bribe Ranger Hurst to drop the case. His bid was too low."

DISTRICT 6 - NORTH PACIFIC DISTRICT

Winter Study Course: Ranger Lyman of the Siskiyou believes in Winter Study Courses. He says:-

"We are told that the Winter Study Course is to be relegated to the realm of the 'Light-Burners,' the 'didn't-know-it-was loaded,' the 'man-who-rocked-the-boat' and other also-rans. How come?

One brief experience of study courses revealed to us the following merits:

"1. They stimulate general interest in all activities.

2. They provide an opportunity for a general brushing up on Regulations which we would not otherwise take time for.

"3. They keep the field force in touch with the District office viewpoint regarding practical daily problems.

"4. They give an opportunity for field men to state their views of practical daily problems.

"5. They provide a practical worth-while occupation during bad winter weather.

Are these considerations of negligible value in promoting the efficiency of the Service?"

Game Meeting at Seattle: Recently a 3-day meeting was held at Seattle at which representatives of the State Game Department, County Game Commissioners and Game Wardens, State Grange, Biological Survey, Washington State Sportsmen's Association, and the Forest Service were present. The purpose of the meeting was to perfect plans for closer cooperation and the initiation of the necessary legislation for a better administrative law pertaining to wild life in the State of Washington. The meeting was very harmonious and represented a long step ahead in the way of cooperative understanding between the many interested parties.--E.N.K.

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WHAT IS THE MATTER WITH OUR LAND EXCHANGE BUSINESS?

By L. F. Kneipp, Washington

About one-seventh of the gross area of the National Forests is in State, corporate or private ownership, a fact which has painfully impressed itself upon many an ambitious Forest officer engaged in the preparation of working plans. For years and years we hoped and groped for some plan to meet the difficult problem of diverse ownerships within natural units of timber-sale, fire protection and grazing management. Nor were we alone in our hopes. States and private owners also recognized the advantages of consolidating their holdings into compact bodies capable of efficient use and management. The answer was "Land Exchange" and toward that end both public officers and private owners worked hard and effectively. Piecemeal progress was made under special acts applicable to individual holdings or specific Forests, but the big idea was a measure authorizing exchanges in any and all Forests.

The President signed the General Land Exchange Act of March 20, 1922, and we had visions of a rush of private owners rivaling that following the opening of the Cherokee Strip. Nothing happened. We then concluded that while no rush would occur there would be a deliberate and orderly movement for exchanges which would result in the rapid acquisition of the most important lands now in private hands. Nothing of the sort has occurred. Luckless holders of inaccessible or relatively valueless lands have naively proposed exchanges for equal areas of valuable timber close to railroads and many lemons have been tentatively tendered, but thus far offerings of the kinds of land we want have been few and far between.

Another thought was that Supervisors, troubled for years by the existence of private holdings, would concentrate their efforts upon the preparation of land exchange plans, secure their approval, and then aggressively proceed to put over some very desirable deals. Perhaps this is actually happening, but if so the results have not manifested themselves in the Washington office.

There is no desire to make a showing of land exchange business except in the form of improved National Forest conditions. The Government has abundant time and patience, and any advance occurring in the value of private lands will be compensated for by comparable advances in the value of Government land and stumpage. We can better afford to take time than to make serious mistakes. The present inactivity in land exchange work therefore raises only one question, and that is whether there is any serious defect in our land exchange policy and procedure. Are we defeating our own best ends by asking too much or giving too little? Have we created the impression in the minds of private owners that exchanges are complicated proceedings involving heavy costs and the employment of expensive specialists? Is there, in fact, anything the matter with our position, or must the apparent lack of interest be credited to other conditions? Perhaps some of the men in the field, where the other end of the problem is most apparent, can contribute constructive suggestions on the subject.

A CALIFORNIA TREE IN ARIZONA

By Geo. B. Sudworth, Washington

In June, 1922, Forest Supervisor H. Basil Wales, of the Prescott National Forest, found a single tree of Fremontodendron californica growing in the Bradshaw Mountains at a point approximately 8 miles south of Crown King. This tree was about 16 feet high and 6 inches in diameter. It is sometimes locally known as "Slippery Elm," "Leatherwood," "Flannel Bush," and "Fremontia." The Bradshaw Mountains are in Yavapai County, west-central Arizona. Roughly, this newly found station represents an eastern extension in range of possibly 200 miles or more outside of its range in California. Previously, Fremontia had never been detected outside of California, where it is distributed from the western foothills of Mt. Shasta to the San Pedro Matir Mountains, Lower California. Its occurrence is nowhere frequent west of the Sierras, in the foothills of which, however, it attains its largest size (18 to 30 feet and 10 to 12 inches in diameter). On the east side of the Sierras it grows abundantly as a low shrub, often of several acres extent, in the region of the Mohave Desert.

The tree found by Mr. Wales may be from seed carried eastward by one of the many possible agencies from the low shrubby growths of southeastern California. It is difficult to believe that this tree represents the only eastward jump made by Fremontia outside of California. Probably the tree grew from seed of still other individuals located farther west in Arizona that represent eastern extensions from California. Further careful search is likely, it would seem, to discover that Fremontia grows elsewhere between California and the Bradshaw Mountains.

At the season when Mr. Wales found Fremontia in Arizona, it was covered with brilliant yellow flowers, which make the tree a very conspicuous object in the landscape and easy to detect among other growths. A month earlier, or later, the tree might pass unnoticed, for without flowers it is not conspicuous. Finding it then outside of its accustomed range would depend largely upon the observer's intimate knowledge of other much less striking characteristics.

THE CART BEFORE THE HORSE

By Will C. Barnes, Washington

Referring to the feeling which exists among some of the field men that the Washington office is continually calling for long and, to them, unnecessary reports, it is somewhat amusing to note that while the Washington office, in the matter of game, only asks for a short statement as to the number of game animals on each Forest, their condition, violations of the law, etc., every District is now calling upon the Supervisors for a long and somewhat involved report as to game matters, copies of which go to the Governors, presumably to each Supervisor, to the Forester, and to the Biological Survey.

The Washington office, of course, does not object to such reports; in fact, quite to the contrary, findsthem extremely interesting, but the fact remains that if the Washington office had called for these reports, we would immediately have heard from it as another evidence of our demands for unnecessary paper reports.

Running over a number of these game reports now lying on my desk, their extreme length and the way they go into details is somewhat interesting. The one from the Leadville Forest, for instance, covers 60 pages; the Cochetopa, 56; the San Isabel, 81; the Pike, 54. We recognize the value of these game reports, enjoy reading them, and have no desire to interfere with their continuance. Nevertheless, it does strike the Chief of Grazing that the field men have been somewhat inconsistent in their criticism of our requirements as to reports when one considers the comparative length of the game reports vs. the grazing reports. An 81 page game report and a 30 page grazing report from the same Forest strikes us here as somewhat out of line with their importance and rather gets the cart before the horse.

I often pass a gracious tree
Whose name I can't identify;
But still I bow, in courtesy -
It waves a bough, in kind reply.

I do not know your name, O tree,
(Are you a hemlock or a pine?)
But why should that embarrass me?
Quite probably you don't know mine!

ALASKA HAS 'EM

By L. C. Pratt, D-8

That insects are destroying an important body of spruce timber just beyond the northern boundary of the Chugach National Forest has been reported to the Service by Fred H. Moffit of the Geological Survey. The infestation occurs along the Copper River and Northwestern Railroad, about 150 miles from Cordova. Mr. Moffitt reports these destructive beetles, which have been identified as Dendroctonus, as occurring on the Chitistone River, the Kuskulana River, and the Chitina River valley.

"So far as I can learn," reports Mr. Moffitt, "the damage in this locality has taken place in the last few years. Although I have been familiar with this district since 1907, I do not remember having seen the work of the beetles longer ago than five or six years. Their wide distribution would, however, indicate to my mind that they have been present for a long time.

"I did not make observations to determine the proportion of trees infested, but my impression is that the proportion, considering the district as a whole, is not great in spite of the wide distribution of the beetles. Unfortunately, the better trees are the ones attacked chiefly. When the infection starts the leaves begin to fall and the tree gradually takes on a brownish aspect which becomes more and more pronounced until all the leaves have fallen and the tree is dead."

So far no steps have been taken to combat this beetle.

NEW USE FOUND FOR WESTERN JUNIPER

By T. D. Woodbury, D-5

On the west side of Goose Lake within the Modoc National Forest, in the extreme northeastern corner of California, there is a level lava plateau 250,000 acres in extent, covered with jagged malpais rock, to which the local settlers have given the picturesque name of "Devil's Garden." Here, where the more valuable species can not thrive, due to poor soil and lack of drainage, the sturdy Western Juniper has gained a foothold and has produced a stand of 130,000 cords of wood. This species grows very slowly; is limby, gnarled and deformed. Only exceptional trees reach a diameter of 30 inches and a height of 50 feet. Because of these unfavorable qualities this tree has been given but little attention by lumbermen and foresters, although the local communities have drawn upon this area for fuel and posts for many years.

The eastern red cedar of the South Atlantic States has for years been the standard material for the manufacture of high grade pencils. The supply of this material is being rapidly depleted. Tests of the wood of western juniper made by pencil manufacturers some years ago indicated that the properties of this wood are very similar to those of eastern red cedar, but the remoteness from transportation of the western juniper stands, the small amount of timber per acre, the knotty and crossgrained character of the wood, all tended to prevent the explcitation of this species as a pencil wood.

A little less than a year ago, however, a progressive pencil slat manufacturer decided to undertake the venture. This concern submitted a bid to the Forest Service on 50,000 cords of the wood of this species.

NEW USE FOUND FOR WESTERN JUNIPER (Cont.)

The offer was accepted and a contract signed which runs until July 1, 1941. This contract also provides that the portions of the tree not suitable for pencil wood will be manufactured into fence posts and cordwood to be marketed locally.

This operator during the past summer established a small cut-up plant at Alturas, California, the headquarters of the Modoc Forest. Somewhat over 500 cords of juniper has been cut and hauled to this plant and is now in process of manufacture into pencils to make up a portion of the billion pencils which it is estimated are annually manufactured from American woods. A portion of these are consumed abroad, but statistics show that we use about seven pencils each in this country annually.

The juniper logs are hauled to Alturas, some ten or twelve miles, by motor trucks. There they are first cut into sections 8 inches long, from which blocks two and five-eighths inches square are made. These blocks are then cut into slats of pencil length and thickness. The slats are shipped to the large pencil factories on the Atlantic Coast.

WASHINGTON NOTES

Mr. T. W. Norcross, Chief Engineer, and Mr. John W. Fox, District Engineer, District 7, left to-day for Chicago to attend the convention of American road builders which is being held in that city. They expect to be gone several days.

Some Lambs: The annual grazing report from the Holy Cross Forest, Colorado, rather places the ranges on that Forest at the head of the list when it comes to turning off well finished lambs.

The average of all the lambs turned off the ranges was between 70 and 80 pounds at Kansas City. One shipment of 700 lambs averaged 78 pounds at Kansas City, with a cut-back of only one lamb. They must have been pretty good stuff to stand such a long shipment and weigh out so well.

The percentage of lambs marked up to the Forest averaged 99, while the calf crop was about 70 per cent, which, considering the weather conditions that prevailed over practically all the Colorado ranges this year, is a mighty good record from a stockman's point of view.--W.C.B.

Col. Greeley has approved the program for the Ogden grazing meeting, together with the selections made for committees. Mimeographed copies will go to the districts within a very few days.--W.C.B.

Grazing Examiner Harry E. Malmsten of the Great Basin Experiment Station left January 1 for a five months' leave of absence to assist Dr. Sampson, formerly director of the Great Basin Experiment Station, in starting the new range investigative work at the University of California.--W.R.C.

FOREST PRODUCTS LABORATORY

Laboratory Identifies Many Specimens of Wood: A regular stream of specimens of wood for identification flows to the Laboratory. During October, 1024 different pieces were received from 27 sources. Of these 748 were identified to species, 208 to group, 66 to genus, and only one, a foreign wood, could not be identified.

Most of these are sent by firms or individuals who need the information in their business; often the exact knowledge received averts expensive litigation and quite commonly the determination of a species decides the use of a large shipment of lumber. Undoubtedly, as the supply of standard species decreases, there will be an increasing demand for our wood identification services.

Some of the requests satisfy curiosity only; for example, a piece of wood apparently petrified on the outside, dug up 100 feet below the surface in Minnesota, was found to be a species of cedar. Another request for identification accompanied a section from a tree which had grown on the court-house tower of an Indiana town. A specimen which seemed to be infiltrated with ore and found in blue clay 21 feet below the surface in Wisconsin proved to be a species of spruce.

Structural Timber Grading Rules: A big step forward in promoting standardization was made when the directors of the National Hardwood Lumber Association at their meeting in Chicago adopted the Basic Rules for Grading Structural Timbers. At conferences held by members of the Laboratory with officers of the association, grading rules were worked up based on laboratory rules and covering also such defects as wane, grub holes, wormholes, etc., which are not included in the Basic Grading Rules. Wide publicity and use will result when the association places these rules in its grading manual, advertises them to architects and designers, and educates its mill men to cutting timber in accordance with these grades. Hardwoods graded under these rules, the association believes, will enter house construction, especially locally, to a greater extent than has been done in the past.

DISTRICT 1 - NORTHERN DISTRICT

Gov. Joseph M. Dixon, in his message to the Eighteenth Legislature of Montana, made the following recommendation concerning timber taxation:

"Under our constitutional mandate, the present system of taxing our diminishing timber supply is not only an economic crime, but threatens the future welfare of the State. It enforces the cutting of our timber supply for the future, ahead of its natural time, by its present owners in order to avoid absolute confiscation.

Timber, like minerals, should contribute an extra heavy tax when severed from the soil. It is my belief that Montana, in self-defense of its own future development and in order to conserve its invaluable timber resources, should change the present unscientific method of taxing timber by providing a moderate annual tax on the land and a heavy toll from the timber itself at the time it is harvested."

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Colorado Edition of La Poudre: Through cooperation of the District office with the Chamber of Commerce of Fort Collins, Colorado, the entire space in a magazine entitled "La Poudre," published by the Ft. Collins organization, has been given over to articles of the Colorado National Forest, prepared by members of the Forest Service, on various phases of National Forest work as carried on in this region. This edition of the publication will be advertised as a special Colorado National Forest Edition.

More Game Refuges: There is considerable activity to bring before the present session of the Colorado Legislature a number of new State game refuges; and it is expected that five or six more will be established at this session.

Soil Problem: In 1914, the Morton Nursery was established on the Niobrara Division of the Nebraska Forest through special legislation secured by interested local people who desired to have afforestation work started on that division of the Forest. The first seedbeds were sown in 1915 and it was soon found that the trees were unhealthy, portions of the roots rotted off and an incrustation was noticed on the surface of the soil. After analysis of typical soil samples, the Bureau of Soils announced that there was alkali present, but not in sufficient quantity to be injurious to crops. Silviculturist Bates took the position that farm crops and coniferous trees have different requirements and differ in their susceptibility to alkali and that these conclusions did not necessarily apply to conifers.

Tilling was recommended as a possible solution to place the soil in condition for good tree growth, but the situation has grown worse recently instead of better. During the past season, it was found that if the nursery areas containing trees were diked and then flooded that this treatment kept the alkali from concentrating near the surface. However, recent tests by Mr. Bates indicate that the water of the Niobrara River, which is used for irrigating, contains alkali and that the continual addition of this alkali to the soil will in time counteract the beneficial effects of flooding. A final trial of this site will be given next season and gypsum and magnesium sulphate will be added to counteract the alkali.

DISTRICT 2 (Cont.)

Stock Show Draws Convention: The occasion of the National Western Stock Show, which has come to be a national event in Denver, is taken advantage of by various other organizations and associations to hold their annual meetings. During the week January 13 to 20, there will be held in Denver not only the stock show, but annual meetings of the Colorado Stockgrowers Association, the Game & Fish Protective Association and the State Forestry Association.

Advantage is taken of reduced fares at this time and usually there is a good attendance at all these meetings.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Better Evidence Required: A Ranger's explanation of a law case that went wrong - "The simple fact is that the man confessed his guilt but the judge practically called him a liar and turned him loose."

Grootfontein, Where Sheep Grow Without Water: Shall we import Australian sheep into the Southwest or reseed our drouth stricken ranges with pure stands of Australian prickly pear - which? The mere habit of drinking (water) which American sheep seem to have gotten into apparently means nothing in the young lives of Australian "Woollies." A recent newspaper item credits the British Royal Agri. Farm, Grootfontein, South Africa, with this experiment: Sheep existed "for 280 days solely on a diet of prickly pears, and if a little lucerne plant is added, for 500 days, without a drop of water."

We have written for the rest of the story!

Fire Calculation on Santa Fe: In the year 1973, along about the middle of June say, the Gallina District will experience a fire originating from a cause which, it is believed, is absolutely unique. The burning coal vein just off the starboard side of that District which, so the Viejos say, has been afire at least for the past 36 years, will by that time have crept to the surface within the Forest.

By referring to the Pe-ru-na Almanac and Weather forecast, it will be seen that June, 1973, is to be a month of exceeding drought and heat, and this timely warning is given in order that the Gallina District Ranger may have his trusty McLeod sharpened up and the winters grease completely removed.

Dry Years and Trout Fry: Has a dry year when no floods occur, like the present one, anything to do with increased natural restocking of trout in the mountain streams? I have asked myself this question several times this year. According to my observations, I would say yes. I have noticed during the summer on several trout streams on my district thousands of small fry averaging from 1½ inches to two inches. The number has been much larger compared to other years when floods occur. I think all mountain streams have had a large natural restocking this year. Would like to hear from some one else on this subject.--J.A.R.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Mr. D. A. Shoemaker makes the following report of the splendid work done by the Grazing Reconnaissance party on the Fillmore the past summer:

"The grazing reconnaissance party which worked this year on the Fillmore Forest mapped and typed about 110,000 acres, which almost completes the north portion of the forest. Typing was discontinued about the middle of October, since the forage at that time was so frozen and dried up that accurate estimates could not be secured. However, the mapping continued until October 30, when a quite heavy fall of snow prevented any further work this year.

"During this season a considerably different method of mapping was used than has been the practice in the past. Instead of making a detailed contour map which was later used as a basis for securing type acreages, only a skeleton or drainage map was made, the type lines being located by alidade and traverse board methods at the same time the map was being made. This method we believe results in a map which shows acreages of forage types fully as accurately as the contour mapping method and which contains sufficient data for a practical grazing working plan. The contour method of mapping necessitated the examiners going over the ground in detail at two different times, first to get the contour map, and the second time to get the type lines and type write-ups, since all of this could not be done at one operation.

"The drainage map which was made this year is made by the examiner going over the ground only once in detail, since the drainage map and the type map is not too much for one to make at one operation. It is believed that the method as used this year, if it proves practical as we think it will, will be a big aid in speeding up the work of intensive grazing reconnaissance, since undoubtedly it will materially reduce the cost per acre of this work."

DISTRICT 5 - CALIFORNIA DISTRICT

Sequoia Men Go After Offenders: Late Sunday evening, October 15, we got a "hunch" through F. E. Wooldridge, road foreman, that there had been a game violation above Pine Flats near the Capinero Road Camp. Slinkard and Brown started out early Monday morning, finding J. C. Bellah and H. B. Stevens camped out 1/2 mile above the road camp. They were requested to produce the meat, horns and hide of the deer they had killed on the previous Friday. They had a good story which sounded very plausible. The horns were in Porterville, 3-point, and the hide and meat were at their base camp about three miles away. Brown and Slinkard "gum shoed" it to the other camp, found the hide which bore no evidence of sex, grabbed the meat and came back to the camp above the road camp, where Bellah admitted he had killed a doe. The following morning he pleaded guilty to a charge of having illegal deer meat in his possession and was fined $25.00 by Judge Mitchell of Ducor.

Burning Permits Required in San Diego County: Recently the Supervisor of San Diego County passed a drastic ordinance which requires that burning permits be secured from April 1 to December 31 before fires can be started to clear land, burn brush, grass, stubble, etc., or set off fireworks.

Sandy Has Some Eyes: The other night, 7 o'clock, the telephone rang at Shaver and Westfall answered: "Hello," said Sandy. "I see a fire on Stevenson Creek." "Where are you?" asked Westfall. "Over at the Hogue Ranch," said Sandy. "Well, I'll be ------," said Westfall as he took his McLeod tool and hurried forth. Up Stevenson Creek he went, turning over every stone and looking under every leaf. At 10 o'clock he came to a man sitting on a rock smoking a pipe. "What you smokin?" asked Westfall. "BULL DURHAM," answered the man. "Well, get down in that gulch so Baldy won't see the smoke."--Sierra.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Game Protection Pays: According to the "Oregon Voter," the Oregon State Commission "financed its varied activities of 1922 entirely through the sale of hunting and fishing licenses." Also during 1922 there were 756 arrests made for game law violations, as compared with 184 in 1918.

D. Fir and D. Fir: Douglas fir in the Inland Empire occupies an intermediate position with respect to mechanical properties, as indicated by specific gravity determinations, between Douglas fir from the Pacific Coast and Douglas fir from the high elevations of the Rocky Mountains in Montana and Wyoming.

The average of the best groups of trees studied for the Inland Empire show qualities, as indicated by the specific gravity determinations, equal to the average values of Douglas fir from the Pacific Northwest, and the average values of the poorer groups of Inland Empire Douglas fir are about equivalent to the average values of the material tested from the Rocky Mountain types.--W.H.G.

DISTRICT 6 (Cont.)

More Publicity: The Oregon Journal, one of Portland's afternoon papers, plans to have an annual edition to be out about January 1. The editors have asked the Forest Service for 5 or 6 illustrated stories and a large number of "fillers." Stories are being prepared by members of the District office on some of the following lines of work: Protection, Roads, Water Power, Western Hemlock, Reforestation, Range Management, Poisonous Range Plants," Wind River Experiment Station, and the Columbia and Oregon Forests will furnish stories also.

A New Organization Formed in Seattle: The Hoo-Hoo Club is out for an intelligent and definite forest policy for State and nation. It is confidently believed that in this manner Hoo-Hoo in general, and the Hoo-Hoo Club of Seattle in particular, can impress itself upon the citizenship for a great work. The speakers at a recent Hoo-Hoo dinner referred repeatedly to the revelations brought out at the Washington second annual forestry conference, which had just closed its sessions here, showing that at the present rate the stupendous timber resources of Washington are going as did the forests of Minnesota and Wisconsin, with one result, that every member of Hoo-Hoo would be looking for a job outside of the lumber industry.

It has been shown that Hoo-Hoo has a real mission to perform; and in the formation of the Hoo-Hoo Club of Seattle that the order at last has caught its stride and now is going to it."

FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

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CONSIDER NEW JERSEY

By E. E. Carter, Washington

At the Weeks Law Conference a year ago, after an able talk on fire protection by an eastern State Forester, one of those attending from the West was heard to mutter something about "woodlots and parks." Unfortunately, that particular man did not hear State Forester Wilbur later describe the 15,000 and 40,000-acre fires with which New Jersey has been plagued. Now comes a bulletin by Associate State Forester Baker, entitled "Forestry for Profit," which can be considered with profit by any forester. It says: "New Jersey still has two million acres of second growth and cut-over woodland. * * * For many years forest land cleared for farming and industrial development has been closely balanced by abandoned fields reverting to woodland. * * * New Jersey consumes the equivalent of 600,000,000 board feet of timber annually, half of which is sawed lumber used in industries and for construction, while the other half is used in rough form for poles, ties, piling, mine timbers, posts, cordwood, etc. * * * The output of New Jersey sawmills is approximately 30,000,000 board feet, or one-tenth of the sawed lumber consumed, leaving nine-tenths to be imported. On the other hand, about two-thirds of the round and rough timber is produced locally. At present freight rates it costs the people of New Jersey not less than $5,000,000 annually for freight alone on imported timber. * * * New Jersey is now cutting the equivalent of 230,000,000 board feet annually (mostly not sawed), or 115 board feet per acre per year. An annual production of 300 board feet per acre per year, which is easily possible once the forests are protected from fire and are put to work under forest management, will yield an amount equal to all the timber now used. * * * New Jersey can eventually grow practically all the timber needed for home consumption."

Mr. Baker gives a map which shows that something like half the State is "50 to 100 per cent forested." In fact, it must be, for the entire State is over 40 per cent forests, with over 300,000 acres of tidal marsh and sand beach counted as part of the total area. Also less than half the total acreage of the State is in farms, and less than 7 per cent is "urban, railroads and highways."

All of which is recommended for meditation by those to whom the name New Jersey brings visions only of Atlantic City, Hoboken, rum runners and mosquitoes.

WATERSHED PROTECTION IN DOLLARS AND CENTS

By F. S. Baker, D-4

For years I have been trying to find somebody who would tell me what this watershed protection we talk about is worth in cold cash. I have asked Lands, Forest Management, Grazing, and Grazing Studies many times but without avail. The other day I was reading the Manual and my eye lit on item 4 at the top of page 9-A. This value of watersheds is in the allotment estimates! Highly elated I went down to "O" and demanded the dope. (I had never had any idea "O" knew anything about it before.) "Oh," they replied, "that's one of those things that are in the Manual all right, but they don't exist anywhere else." I departed a wiser man. "Well, if nobody else will do it," thought I, "I'll do it myself." So I did.

Take the Snake River Valley in Idaho, for instance, with acres and acres of irrigated farm land, great dams, reservoirs, cities, - real cities with big stores, movies, crooks, automobiles and flappers. Water, just plain water, running in little streams in far away forests did it all. What did it do? It took sagebrush desert worth maybe $5 an acre and made it worth $45 an acre. Now don't go and think up all the $200 land you know of. The assessed valuation of irrigated lands in six counties in the upper Snake is $43.61, so $45 isn't a bad average at all for assessed valuation. There are 2½ million acres of this land. The increased value due to water is $40 per acre, - multiply it yourself - one hundred million dollars total. Now, if we judge by the Minidoka Project - not because it is especially fine, but because it is the only thing I can find information on, - the values in cities and public utilities created equal that of farm values, or one hundred million dollars more. Credit water with two hundred million dollars! Now, how many acres did it come from? Well, there are nine million acres of National Forests that certainly sent down lots of water, and then there are perhaps three million acres of other fairly high country in between, up Lost River way, on the edge of the Yellowstone Park, and so on. (I don't figure that the very early water from the scanty snows of the plains themselves amounts to much.) Twelve million acres created two hundred million dollars values then, or about $17 to each acre. Pretty good, - what? But wait! That is the value of the mountain watersheds per acre, not the value of proper protection that we are forever harping upon. Cut down the trees, burn the land, turn on ten million goats and pigs to destroy the forage, and grub out the roots, marshal armies of bark beetles to riddle away surviving trees, in fact simply ruin the whole works. The mountains will still stand there. The heavy snows will still gather on the peaks and the great drifts will melt slowly through the midsummer. Are the high, rough, barren Sawtooth Mountains valueless as sources of irrigation water? Do what you will, you can't ruin the whole $17 value of these watersheds. All right. But we do cut a hole in it, just how big it is hard to say. If the watersheds were ruined vast quantities of silt would come down, the great reservoirs would clog up before paid for, canals would need cleaning every few minutes, maintenance charges would go up and the poor farmers would long for the good old days back in 1922 when spuds were 40¢ a hundred and banks only went busted once or twice a year. Maybe the country would go back to where it was before the great projects were built, - when irrigated farming had only 1/8 its present value. We would have destroyed 7/8 of $17 or about $14. If watersheds were not so badly "razzed," things probably would not come to this pass. Nevertheless silt, rocks and junk would come down. The usefulness of dams would be impaired, annual charges would soar, late water would be short especially where reservoirs were small, and crops would become smaller, - and naturally land values and prosperity would go down. Probably your estimate on this is as good as mine, but it looks to me as if half of the great values created could be rather readily destroyed through the mismanagement of watersheds, - that is, about $8 an acre. What do you think? Therefore we are custodians of values of $8 an acre in watershed protection alone. What is the integrity of your forest worth then to the water user, - probably somewhere about eight million dollars, and your ranger district. Roll your own figures.

Why don't you, some of these days, take a small watershed and irrigation unit, one you know like a book; figure out the values you can truthfully say are due to water and then divide this by the watershed area to find out how much it is worth per acre? Then imagine it misused and figure how much more it would cost to irrigate, how much poorer the crops would be, etc., and see how much of this value created by water can be destroyed and how much is due to the mere fact that mountains are mountains and as such get the lion's share of the rainfall. I expect you would get lower values than I have because the values created in the Snake River Valley are truly remarkable.

Take a whack at it once - it's the real dope that knocks them cold.

DEAD

By E. W. Kelley, Washington

Dead - the organized advocator of light burning in the pine region of California and southern Oregon. According to a recent California District News Letter, that arch enemy of American forestry was, on January 5, pronounced deceased.

Mr. Redington in his News Letter item goes on to say:

"The California Forestry Committee * * * voted unanimously that further investigation and work in connection with 'light burning' was unnecessary, since the results of the last three years have demonstrated that such burning is impracticable, both from a seasonal and financial point of view."

This committee consists of representatives of Pine and Redwood Manufacturers' Associations, the University of California Forestry School, the State Board of Forestry, the Southern Pacific Railroad and the Forest Service. The membership of the Pine Lumber Manufacturers' Association is composed of the majority, if not all, of the largest owners of pine lands in the West. The Southern Pacific Railroad Company controls the land originally granted by the Government to the Central Pacific Railroad Company. This grant extends for 20 miles on each side of the railroad track, both along the route through California to Oregon and the route across the Sierra Nevadas as far east as Ogden. Since so large an acreage of privately owned timberland was represented in the investigation mentioned by Mr. Redington, there remains little doubt as to how the pine owners in California and southern Oregon now stand in reference to this vexing question. Mr. Redington concludes his item by the words: "The ghost of light burning is laid to rest." Thus we have the assurance that the Piute forestry idea is at last out-distanced and wind-broken in its race with the ideas of those who have long known that fire and the growing of pine trees can not go hand in hand. To those inside and outside the Forest Service who took part in this neck and neck race, strongly handicapped as they were by public opinion in favor of the light burning theory, great credit is due. It is really a brilliant achievement and one which marks an epoch in the progress of California forestry.

WASHINGTON NOTES

New Form: On the recommendation of District 4 and one other District whose identity has been lost, a new form in the 874, Ranger Notebook Series will be printed listing the 29 activity cost captions to which time should be charged in the diary and on the Form 26. It is believed that with this form carried in the Ranger notebook or pasted on the cover, the proper charge to make at the end of the day's record will be more easily determined and that the resulting records will be more accurate. These forms will be on requisition in the Ogden Supply Depot within a short time.--R.H.

"*Savage Mice*": Under the heading Principal Departmental Library Accessions we note "Heredity of Wildness and Savageness in Mice," by C. A. Coburn of Baltimore, Williams Wilkins Co. publishers. This will be of intense interest to feminine members of the Service. Wonder if Captain Eldredge couldn't get out a monograph on "Morphological Determinism as affecting the Reckless Demeanor of Dendroctonus."

At Last: In his annual grazing report Supervisor Hall of the Shasta makes the following comment:

"Coniferous reproduction is rapidly shading out the palatable browse, and large areas of once splendid Blue Brush (Ceanothus integerrimus) are now dense stands of yellow pine reproduction. These conditions force stock into heavier brush areas, and as these brush areas are opened up, yellow pine reproduction follows.

"If fires are kept out, which is hoped can be done, the time is coming when the carrying capacity on browse ranges will be very small. It is believed that heavy grazing on browse ranges has stimulated reproduction, and evidence of this fact can be seen on nearly all of our browse ranges." The old cow comes into her own.--W.C.B.

Lumber from California: A carload of 26,500 feet of western yellow pine lumber has just been received at the Laboratory from northern California.

The lumber is of various thicknesses and widths and will all be used at the Box Laboratory in the manufacture of approximately a thousand boxes and crates that are later broken up during test in the big revolving drum.

These tests will determine the proper thicknesses of material and nailing, improved design of wooden crates, and the best form of metal strapping or other bindings.

The box and crate industry is now the second largest wood-using industry in the United States and uses approximately 4-1/2 billion feet or 18 per cent of the wood required annually for the manufacture of wooden products.

Lead Pencil Waste: Perhaps the correspondent whose letter we quote has heard of the pencil-saving discussion in the Service Bulletin, or possibly he may be a manufacturer of mechanical pencils.

"In your campaign of protection against unnecessary wastage of wood, it may be valuable for you to take cognizance of the amount of wood employed by the wood pencil industries of the country that might properly be applied to more essential uses.

"If the mechanical pencil now manufactured in great numbers by an increasing number of concerns were to be substituted entirely, there would be a saving to the country of thousands of feet of timber. The emphasis on this would accelerate the entire campaign for the saving of timber.

"Do you feel that this saving is sufficiently important to be recognized by the Department of Agriculture, Forest Service?"

DISTRICT 1 - NORTHERN DISTRICT

White Pine Yield: The completion of the Ohio Match Company sale on Scott Creek on the Coeur d'Alene has given an interesting check on yield in the white pine type. The stand was damaged by the 1919 fire and was offered for sale in order to salvage it, though it was considered to be mature. The stand was even-aged from 90 to 100 years, apparently having followed a clean burn almost exactly 100 years ago.

The total cut on 790 acres was 31,300 M, and it is estimated that there is 500 M left, making a total of 31,800 M, or 40.1 M per acre. This averages a trifle over 400 feet per year increment. The timber was 40½ per cent white pine, the balance being white fir, Douglas fir, hemlock and larch. This is not a specially selected area, but included practically the whole Scott Creek drainage from rim to rim, so it ought to give a fair indication of what can be expected at 100 years from the best areas of burn reproducing to white pine.

The price of this timber was $5.10 for green white pine, $2.00 for dead white pine, $1.00 for white fir and cedar, and $2.00 for Douglas fir and larch.

Record Price: Districts 5 and 6 are making a good sprint for lead in quantity of timber sold, but can either of them beat this price? Bids on the Uranus Creek chance on the Coeur d'Alene were recently opened and the results certainly indicated that the lumber companies want white pine. The chance included a very high percentage of pine, sixteen and a half million feet, together with 1,200 M of white fir. It was appraised at $8.50 for white pine and 50 cents for white fir. Competition was keen and five bids were submitted. The Rose Lake Lumber Company got it at a price of $12.40 for white pine and 60 cents for white fir. Almost any kind of a white pine chance now brings from $6.00 to $9.00 a thousand.--E.K.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Sawmills for Ties: Is the time approaching when the picturesque tie hack, with his broad axe, will be replaced by a sawmill on wheels? The experiment of manufacturing ties with such a sawmill driven by a Fordson is to be given a thorough try-out next spring in the Foxpark region of the Medicine Bow National Forest.

The general shortage of skilled tie choppers at wages returned to practically the high war time scale appears to make the sawmill, with its comparatively cheap and unskilled labor, a real competitor to the tie hack method of production. Logs will be handled in eight-foot lengths and then skidded directly to the mill, which will move progressively through the timber along strip roads with set-ups every few hundred yards.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Who? What? Why? (Essential elements of good planning): Through cooperation worked up by Forest Ranger Moore with the Indian Service, residents of Espanola and the Rio Grande Valley, and a sawmill operator, the road out of Santa Clara Canon to the Puje Cliff Ruins on the Santa Clara Indian Reservation and leading into the Forest near the Stonehouse Ranger Station is being reconstructed so as to be reasonably accessible to autos. The principal work is being done on what is known as the Rodarte Hill. The present maximum grade of 18 per cent will be reduced to 10 per cent.

This work is a conspicuous example of a combined recreational, forest development and farm to market project. It facilitates the marketing of approximately 10,000,000 feet B.M. of sawtimber, aids in forest administration, opens up a region of cliff dwellings second only to the Rito de los Frijoles, and probably most important is the fact that thousands of cords of waste timber resulting from the above sawtimber cutting will be made available as fuel to the residents of the Espanola Valley, where there is now a wood famine.--Santa Fe.

Some Forest Left Out: That the Coronado Forest did not include all the forested area in the vicinity of Tucson is indicated in press dispatches which say that within 5 miles of Tucson is the largest standing cactus forest in the United States, while just north of Oracle in Pima County is an area in which every known variety of cactus grows. These areas are said to be under consideration by the Department of the Interior for inclusion in a National Monument.

Prehistoric Screen Story: According to press notices, a scenario is to be filmed at the Grand Canyon which will reproduce in picture the ancient inhabitants of that region. The country around the Bass trail will be the base of operations. Mr. Bass, owner of the Bass Ranch, who has been known to many D-3 men for a long time, will cooperate with the producing company. He will probably be one of the characters.

A Rare Bird: Last April a bird collector spent several days on the Catalinas hunting for an Evening Grossbeak. He stated that he wanted it for the Smithsonian collection and that they were very rare, there being but a few specimens in the country. A few days after he left one flew into the tennis court at Soldier Camp and was found by Vocational Ranger Noll, who mounted it. This bird is being sent to T. H. Wilson at Deposit, New York, who will present it to the Institute.--Coronado.

Forsooth, - a Fog: During the hunting season very little game was killed on account of unfavorable weather conditions. The first few days of the season the hills were full of hunters; Tuesday a heavy fog came over which lasted until Friday night. Several hunters got lost. One night the Ares chuck wagon took care of 14 lost hunters, and one man, in an effort to go from Queen to the Bearup ranch, returned to Queen three times, each time introduced himself to the lady and inquired the way to Bearup's. One bird from Texas walked into the R. S. asked for his mail and when I explained that I wasn't a postmaster he wanted to know what the devil that thar flag ment and if I had a land office out here in these here hills, and he spent the nite also.--Lincoln.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Pollen Smoke: "Smoke" from blowing pollen in the Island Park region occurred heaviest the past season on June 22, at which time the wind was moderately strong and steady. It was noticeable as a gray looking pronounced haze against the hills, very much like late autumn haze, except that at times it was difficult to distinguish timbered hills four or five miles distant. It covered the edges of ponds as a yellow scum. There was no discernible drifting that would resemble the movement of new smoke.--Targhee.

DISTRICT 4 (Cont.)

Brush Burning on the Weiser: Supervisor Rice reports the burning of brush from 545 M feet of timber on the Weiser this fall at an average cost of 10.5¢ per M. The highest cost reported was 25¢ per M, and the lowest 1.5½¢ per M. On several of the Forests the officers are requiring purchasers to burn the brush as the trees are felled and trimmed during the winter season, and where consistent attempts are being made to put this into effect, excellent results are reported.

Game Law Violators: Ranger Gordon of the Caribou Forest and Deputy Game Warden Marriott found some of the more zealous trappers exercising their skill a few days before the opening of the trapping season and took them before the Grays Lake justices to see whether the association would not have a restraining influence. We find that it had, for Justice Frantz Nielsen, after practically an all-night session, received $40.00 from Mr. Miller, $25.00 fine and $15.00 costs. Justice Harry Field was more moderate, probably because it did not take him as long, and assessed William Miles only $33.00, $25.00 fine, and $8.00 costs.--Caribou.

Fish and Game Notes: The other day a party of tourists jumped two deer on the road north of Cedar City. One of the deer ran into a mesh wire fence and broke its neck. The tourists notified the city marshal, who, accompanied by several local men, drove out, dressed the deer and brought it into town. The case was reported to the Forest Supervisor and the deer placed in cold storage. Yesterday the deer was sold at public auction by Deputy State Game Warden Clark. The deer was a buck fawn, weighing 42 pounds dressed, and went at $7.00.--Dixie.

DISTRICT 5 - CALIFORNIA DISTRICT

Cleanliness is Next to Godliness: Three hundred and one special use permittees in San Antonio Canon on the Angeles have assessed themselves $6 apiece with which to pay for garbage collection at their cabins.

He Has Our Number: The following letter was received by Supervisor Charlton from the Church of the Open Door Bible School:

"Dear Sir: We should like a list of the rangers under your supervision, also the names of other supervisors, as we wish to send them some literature. I am personally acquainted with some rangers and realize their needs."

The California Section of the Society of American Foresters held a very largely attended meeting at the Ferry Building on the evening of Thursday, January 4. Dr. E. P. Meinecke, newly elected chairman, presided. The State Forester, Mr. Pratt, presented a program which had been drawn up for State legislation this year. Mr. George Cornwall, Editor of THE TIMBERMAN and an associate member of the society, was present and gave convincingly his views regarding the forestry program. There was considerable discussion regarding the necessity and advisability of legislation of a regulatory nature, particularly in regard to slash disposal.

Aspen Injured by Camping: During a recent trip over the Inyo and Mono, I noticed that at several largely used public camp grounds in the aspen timber, camping is rapidly killing out the trees. This is particularly evident at Silver Lake and Leevining Creek public camps on the Mono. It was noted to a lesser extent at other places. Since the roots of the aspen do not grow down deep, it is evident that trampling of the ground and particularly the building of camp fires close to the trees is responsible for killing them out. Unless something is done soon to prevent the building of fires too close to these trees, some of these camps will soon be almost treeless. Here are cases where the construction of central fire places would doubtless eliminate most of the damage to the timber. I shall be glad to know whether this same condition has been noted elsewhere in this District.--L.A.B.

DISTRICT 6 - NORTH PACIFIC DISTRICT

The Spoken Word: During the year 1922, Forest officers of D-6 delivered 160 talks and addresses to the public. These were delivered by 30 different officers. The encouraging thing is the large number of Rangers among the list of speakers; 13 Rangers delivered 44 talks during the year. These Rangers were: Wiesendanger and Walters of the Oregon; Peachey of the Crater; Brender, H. C. and S. A. Blankenship of the Wenatchee; Young and White of the Fremont; Albertson of the Malheur; Bruckart of the Snoqualmie; Hougland of the Colville; Woods of the Umatilla, and Park of the Cascade. Fourteen Forests and the District office are represented among the speakers. Most of these talks were made, as was proper, during Forest Protection Week. The Rainier Forest leads with 42, Oregon next with 31, with the Olympic a close third with 26.

Valuable Contacts: Supervisor Weigle of the Snoqualmie will take a prominent part in affairs of the Seattle Chamber of Commerce for 1923. He has been elected chairman of the Committee on Mountains and is also a member of two other committees: - Tours, and Smoke Nuisance.

More Sales Activity: Logging Engineer Hoffman has completed an appraisal of a unit of about 110 million feet on Rocky Brook on the Olympic Forest.

It Always Helps: Advertising helps some anyway. We have had 10 to 20 inches of space in local papers each week the past six weeks. A fire started in Bear Valley last week and, in addition to 3 lookout reports, we had three phone calls from ranchers in the valley within 30 minutes. One man jumped in his car and drove about 11 miles and notified a road crew. Everybody seems anxious to help us in fire prevention, but the man-caused fires still keep on starting. Just plain carelessness and not cussedness. We can't feed the public too much "Care with fire" propaganda.--P.A.T.

IDEALS AND ANOTHER "RECENT BOOK"

By Roy Headley, Washington

Walter Lippman, in a recent book, shows with devastating clearness how the attention of a nation is gathered up and fastened on an ideal or symbol which is so remote and general that everyone is able to see in it what he wants to see - the business man sees profit, the religious enthusiast sees the spread of his creed, the humanitarian sees progress of human welfare. This focusing of public opinion gives those leaders who wish to do so a great temptation and opportunity to put over things which public opinion would not stand for if it were not hypnotized by the symbols. The only way to keep ideals in control and to prevent them from being used to lead us into places where we never intended to go and really don't want to go is to permit them to be examined and discussed.

Mr. Granger in the Bulletin of January 15 argues, with his usual persuasiveness, for keeping our ideals sacred and free from the profaning touch of the typewriter and the mimeograph. Doesn't that inevitably mean to keep our ideals elusive, not to be pinned down to anything in particular, meaning widely different things to different men? And does not that mean an opportunity to put things over that we don't really intend or want? Just as the fixing of public opinion on symbols means the opportunity for the public to put undesired things over on itself? Do we want our ideals to be sacred or do we want them to be clear, tested, understandable, understood and meaning the same thing to all men?

THE HEGIRA

By the "Poet Lariat"

'Way Back in 1908 it was Reported that a large portion of the clerical force of the Forest Service was to be moved into the West, with headquarters in the cities of San Francisco, Denver, Portland, Albuquerque, Salt Lake, and Missoula. Inspired by this rumor the "Poet Lariat" in November, 1908, penned the following lines:

Oh, they're whis'pring in the corners
And talking in the hall
They are scheming and a-planning
Where to migrate in the fall,
They are telling one another
Of the places they like best;
Oh, the whole blamed outfit's "locoed"
'Cause we're going out West.

"Have you ever lived in Portland?"
"Is it wet or is it dry?"
"Do you think you'd like Missoula?"
"If you do, please tell me why."
"Is the living high in Denver?"
"Are the ladies there well dressed?"
Oh, these are burning questions,
'Cause we're going out West.

"Now I want to go to Frisco,
Even tho' the earth does quake."
"Well I'm wild to see a Mormon,
So I'd much prefer Salt Lake."
"Do you think that I'd get homesick?"
"Are the Frisco fleas a pest?"
What a turmoil has been started,
'Cause we're going out West.

"Oh, they say that board's expensive
In the town of Albuquerque."
"But you needn't take a street car
For to reach your daily work."
"Well I've heard the living's awful,
(Now please don't think me silly)
But really, do they live out there
On only beans and chili?"

Oh, such like doubts and troubles
Daily agitate the breast,
Of each one in the Service,
'Cause we're going out West.

TOO BUSY!

A road camp adjacent to a National Forest had a number of negroes employed. The entire crew was called to fight fire, which spread rapidly. A dozen of the negroes were building fire line 500 yards from the powder house, which caught fire and went up with a terrible concussion. With one accord the negroes started in the general direction of the camp. Sam, leading the procession, was closely followed by Mose, who noticed that Sam was still trailing his shovel, and he yelled:

"Drop dat shovel, nigger. Drop dat shovel."

"Man, Man," gasped Sam, "I haint got time to drop hit."

Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

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MORE ABOUT ALASKA

By J. C. Dort, D-8

From the number of questions asked and the widespread interest shown, it is apparent that the story of "The land that Uncle Sam bought and then forgot," the title of an article by Scott C. Bone, present Governor of Alaska, has not been told so many times but that it may be set forth again in new form.

When the tourist goes to Alaska he is greatly impressed by the unusual tales of ships coming into port with rigging and upper works all covered with ice as a result of some severe storm, as well as tales of shipwrecks and other disasters. Then the numerous curio dealers have large numbers of picture post cards of the towns buried in snow from some especially heavy snowstorms, icebergs, dog teams in winter, and one enterprising photographer even took a "close up" of a glacier after he had stuck a lot of cooked macaroni in holes in the ice, labeling it "Glacier Worms." The tourist literally "eats up" these unusual and remarkable tales of ice and snow and the hardships of the frozen north, and these are the stories that are so commonly told to the folks back home - not the ordinary story of everyday life in Alaska.

But there is another kind of picture of Alaska that the people in the States should know, and that is the picture of Alaska in the summertime - with summer temperatures ranging from 40°-50° in the early morning up to 75°-85° at midday at Juneau, the capital, in the southeastern part, and from 35°-40° up to 85°-100° at Fairbanks. Even the winter temperatures are not so severe as generally believed, with monthly means of 30° at Juneau, 35° at Sitka, and 0° to 15° at Fairbanks. We can appreciate this moderate climate better when we realize that southeastern Alaska is in the same latitude as the British Isles, and that Alaska proper is in the same latitude as Norway and Sweden.

The Forest Service is primarily interested in southeastern Alaska, where it has the responsibility of administering large timber resources that are chiefly valuable for the manufacture of pulp and newsprint paper. In order to develop a market for this timber, the Service has been carrying on extensive timber surveys, and for the past two years the Service, in cooperation with the Federal Power Commission, has made a detailed investigation and study of all of the known water power sites of this District. Our knowledge of many of these power sites was limited by reports of trappers and prospectors, and many of these reports upon being traced out proved valueless.

There are many lakes in southeastern Alaska, situated near tidewater, varying from practically zero elevation up to 2,000 feet and higher, and with varying amounts of water flowing out of them. This combination forms an excellent power site and one that can usually be developed at a relatively low unit cost. The winter discharge of these streams is very low and a large amount of storage has to be provided in order to develop a uniform amount of power throughout the year, and it is this condition that gives so much value to the Alaskan lakes, because they make excellent reservoirs. The investigation showed that there are a large number of good water power sites capable of being developed to yield from 5,000 to 25,000 horsepower each. Four sites have been estimated at over 20,000 horsepower each, and these are sufficiently large to meet the desires of prospective pulp and paper manufacturers, most of whom seem to want to establish plants of 200 tons daily capacity or larger, and figure roughly that 100 horsepower is required for each ton of paper daily capacity. Other power sites are in groups that can be connected by transmission lines, so that 20,000 or 30,000 continuous horsepower can easily be combined at one manufacturing site.

The officers of District 8 are working on a bulletin which will describe the timber resources of southeastern Alaska, and the Federal Water Power Commission will publish a bulletin on the water powers of the same region. These two bulletins are badly needed in the efforts of the Forest Service to secure the establishment of a substantial pulp and paper industry on the Tongass Forest. When issued they will be of very material aid.

TIMBER SALE RECEIPTS

By E. E. Carter, Washington

For the first half of the fiscal year 1923 timber sale receipts total $1,380,645.74, an increase over the corresponding period for the fiscal year 1922 of $527,163.81, and approximately $340,000 greater than for any preceding half year. It is doubtful whether this amount of increase over the fiscal year 1922 can be held throughout the rest of the fiscal year 1923, on account of the very large receipts in the fourth quarter of the fiscal year 1922, so that the estimate recently submitted to the Bureau of the Budget was for an increase of only $200,000 for the fiscal year. It is obvious that there is going to be a substantial increase, however, because the amount already taken in is only $400,000 less than the amount received during the entire fiscal year 1922.

The size of the increase is due very largely to a greatly expanded business in District 5, which, with over half a million dollars taken in during the six months, shows an increase over the corresponding period in the fiscal year 1922 of $357,000. The Districts show approximate increases or decreases as follows:

D-5	plus	$357,000
D-6	"	136,100
D-3	"	41,100
D-1	"	11,800
D-7	"	6,300
D-8	"	5,000
D-2	minus	6,300
D-4	"	24,400

The receipts for the second quarter are about $300,000 less than for the first quarter, when the normal amount of advance stumpage deposits was being rebuilt after the very thorough liquidation of the summer of 1922. Still, these second quarter receipts are about $90,000 greater than for any preceding second quarter.

It is evident that the timber business for the fiscal year 1923 will be distinctly larger than in any preceding fiscal year.

THE DISMOUNTABLE OBSERVATION LADDER TOWER

By C. R. Tillotson, Washington

The annual report of the Superintendent of the Geodetic Survey of Canada for the fiscal year ending March 31, 1921, describes a new type of reconnaissance tower which that survey has been using, and which has also been used by the Provincial Forester of New Brunswick in locating suitable points for lookout towers. This particular piece of equipment is a ladder tower of the type used by the Geographic Service of the French Army. It permits a man to ascend to a height 76 feet above the ground. The ladder tower is composed of interchangeable sections joined together end to end, which form two vertical ladders about 2 feet apart resting on sleepers on the ground and connected with one another by pairs of cross braces at intervals of five feet. Four sets of guys placed at 25, 40, 55, and 70 feet from the ground hold the ladder steady. It is quite light, weighing about 1,000 pounds, and is conveniently carried in a motor truck. It can be very quickly raised and dismounted, two experienced men being able to raise it in two hours and dismount it in one hour. The Geodetic Survey of Canada has built these towers largely with its own help at a cost of approximately $400 each. Mr. G. H. Prince, the Provincial Forester of New Brunswick, states that he has personally assisted in erecting the tower and has viewed the country from its top on several occasions. A tower of this type will be of particular value, first in locating desirable observation points, and second, in determining precisely the height of the tower which will give the best service at that particular point. Obviously, it is not desirable to erect a 60-foot tower where a 40-foot tower would be sufficient, and on the other hand, it is just as undesirable to erect a 40-foot tower where a 60-foot tower is needed. A dismountable ladder tower of this type should be particularly valuable in a country of a rolling or flat type over which it would be fairly easy to transport the tower by means of a motor truck or a team of horses.

CORRESPONDENCE THAT'S EFFECTIVE

By E. V. Jotter

An overwhelming per cent of our contacts are through correspondence; naturally our usefulness, as well as the impression we make, depends upon the effectiveness of our letters. All this is old stuff, but like some other ancient literature, may, with propriety, even with profit, be considered by us.

Back in 1919 Prof. E. H. Gardner wrote a good article on "Correspondence That is Effective," much of which can be applied directly to our Forest Service correspondence. To quote him: "One of the chief ends to be sought through correspondence is the development of good will. What do we mean by the good will factor in business? We mean the building up of a relationship so pleasant and so full of confidence that when things go right you can do more business, more pleasant business with the people with whom you have relations and when things go wrong there will be confidence in you and in your intentions that will tide over misunderstandings. You have built up an insurance against misunderstandings.

"Lastly, if you will put facts into the first sentence of your letter you will likely get action. If the subject of your letter stands out clearly at the beginning you are most likely to get action, whereas, if the subject is buried down in the middle of the letter your reader may pass over it entirely, or, if he does not do that, he will not appreciate its importance.

"The style of a letter should be conversational. Gauge your language to the reader.

"Do not tell a person what you can not do for him, but what you can do for him, and furthermore, not only what he may ask you to do, but what you know he really wants."

WELL, WELL: HOW ANNOYING!

By B. H. Mace, D-5

An old-time Ranger on the Trinity received a report over the grapevine line that a band of goats were in trespass several miles from his headquarters. He saddled his "fuzz-tail" the next morning and started out. The horse began bucking and landed on his back in the bottom of a gulch some distance from the house, breaking the large bone in the rider's leg. The horse, on being released by the Ranger, who held him down until he was sure his foot was not fast in the stirrup, bucked back to the barn, and the Ranger's wife started out on the back track. Finding that her husband was not able to walk she brought out a gentler horse, and he mounted and rode to the house.

There was a stream of ice-cold water available, and by running it over the broken leg he reduced the pain until, with his wife's help, he was able to set the bone. He then applied splints and bandages, mounted the gentler horse and started out to finish his interrupted day's work. He arrived in due time at the goat herder's camp, only to learn that that worthy knew all about the "reserve" line and was keeping well outside.

The Ranger, after visiting awhile, started on the homeward trip, and all went well until the horse blundered into a hornet's nest. These white-headed gentlemen happened to be in a peevish mood that afternoon, and several landed before the horse realized that it had given offense.

WELL, WELL: HOW ANNOYING! (Cont.)

You will note that in previous references to this animal I have called it the "gentler horse"; however, it is not to be assumed that it was very gentle. In fact, after the second hornet got in its work, it became quite coltish and took to the timber. It finally collided with a tree and rebroke the leg, also broke the splints. The Ranger then decided to ride to his brother's camp, a distance of twelve miles, and reached there at dark. The brother knew of a doctor in a camp some distance from his, so next morning he assisted the injured man to mount and they rode to the doctor's camp. The doctor reset the leg, breaking up a packing box for splints and tearing up his only undershirt for bandages. The Ranger again mounted and rode to his headquarters, where he stayed in bed for thirty days, but only because the doctor insisted upon it.--B.H.M.

> Surely of all smells in the world the smell of many trees is the sweetest and most fortifying. The sea has a rude, pistolling sort of odor that carries with it a fine sentiment of open water and tall ships; but the smell of a forest, which comes nearest to this in tonic quality surpasses it by many degrees in the quality of softness. Again, the smell of the sea has little variety, but the smell of a forest is infinitely changeful; it varies with the hour of the day not in strength merely, but in character; and the different sorts of trees as you go from one zone of the wood to another seem to live among different kinds of atmosphere.--R. L. Stevenson.

CONTROL LINE COSTS

By Roy Headley, Washington

Reports on cost of control line are in from Districts 1 and 2.

District 1 shows a cost of $6.21 per chain on 96 fires on which the record was kept. The average cost per chain in District 1 for the seasons of 1921 and 1922 was exactly the same. In 1920 the average cost per chain was $11.19. There was progress but she stopped!

In District 2, on 42 out of 50 Class C fires occurring during the calendar year, the average cost for control line, including Forest officer's time, transportation and travel time, was $1.37 per chain.

One dollar and thirty seven cents per chain is getting it down pretty low. Some men will say that it is due to the easy fire-fighting conditions in District 2, but District 2 might properly retort that their worst fire troubles are in a country where conditions are not easy at all.--Minnesota.

A Chance: The House of Representatives recently added $25,000 to the item for Silvicultural Investigations, bringing the total up to $110,000. On the floor of the Senate, Senator Lodge got another $25,000 added. These additions, if retained by the Conference Committee that whips the bill into final shape, are designed by Congress for the establishment of two new stations - one in New England and one in the Lake States.--W.S.

Meeting of Fire Fighters: Following the Southern Forestry Congress in Montgomery, the State Foresters and Chief Firewardens in attendance will hold a forest fire conference to discuss various problems connected with the work of protecting forests from fire in the Southern States. It is expected that Virginia, North Carolina, Tennessee, Louisiana, Texas, West Virginia, Alabama, and the Federal Forest Service will be represented. The meeting is scheduled for February 1, the program calling for a morning and afternoon session with a get together luncheon at noon.--J.A.M.

Grazing Examiner Leland S. Smith of the Modoc Forest has arrived in Washington for a three months detail to assist in the forage investigations of the Office of Grazing Studies. One of his early jobs, however, turned out to be injecting some new field ideas into the Grazing Assistant examination questions. We hope shortly to clear up the jam of the usual early winter deluge of plants from the field collectors and to add materially to our stock of economic plant notes.--W.R.C.

FOREST PRODUCTS LABORATORY

Visitors from Priest River Experiment Station: H. T. Gisborne, of the Priest River Experiment Station, spent two days here. Mr. Gisborne is assigned to fire studies in D-1 and has done special research with reference to the relation between humidity and fire control. At the laboratory M. E. Dunlap has also worked on a phase of this study. Mr. Gisborne says that the special apparatus designed by Dunlap to show soil moisture content is one that can be used most effectively in fire protection.

Japanese Forester Visits the Laboratory: The interest taken by Japan in forestry and the recognition by that country of the necessity for keeping abreast with current practice is illustrated by the number of Japanese who have been in the United States to study forestry.

The most recent visitor is Ryjui Okamato, forestry officer of the imperial household in Japan. Two days were spent by him at the Laboratory, which he declares is the most perfect and has the best equipment of any similar institution he saw on his present trip.

He started on this tour last February and has visited laboratories and forests in India, Czecho-Slovakia, Austria, Italy, Germany, Holland, Sweden, Norway, and England. In America he has been in the East since November and will now spend four months in the western forests.

He stated that forests in Japan cover 70 per cent of the country; apparently the Japanese realize that the mountainous and hilly lands must be kept covered with trees, as it is generally recognized there that great damage to agricultural lands would result through erosion or through difficulty in irrigation.

Although the forests are divided into four classes, as national, imperial, small estates, and private, Federal control is practiced, as the government has supervision over all classes.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Xmas Tree Business: On the Pike National Forest, the woods end of the Christmas tree business has been satisfactorily worked out and the application of thinnings through the removal of Christmas trees is both desirable and practicable. When one reads in the daily papers that railroads will make special rates on Christmas trees in carload lots, and it is estimated that 500 carloads of Christmas trees will be shipped into the Middle States in a season, it is time to get serious minded about the Christmas tree business, for it is already a big business in the United States and is going to grow.

This is inevitable. Where do the Christmas trees come from that supply the country each Christmas season? Privately owned lands to be sure. But is forestry being practiced, improvement thinnings being made or is the encroach of the forest upon burns and partly denuded lands being seriously checked? The average man who cuts Christmas trees, picks the long ones, advance guards of the forest, because these trees growing in the open are usually symmetrical, desirable for Christmas trees, and obtained with the least amount of effort and cost. If not this, the Christmas tree hunter with axe and saw scouts the forest stands cutting trees here and there, usually the thrifty growing ones in the open spots, until eventually all the solitary and beautiful trees along our highways, and a considerable distance back, are gone.

The Christmas tree business on the Pike Forest this season was considerably less than last year. A net return of $20 per acre was realized.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Another Task for Mother Goose: After the cobwebs are swept from the sky, Perry the Ranger has a job closer by. One Domingo Vigil, sheep man of this District, recently moved his sheep to the winter range and promptly lost 25 fat, healthy ewes. Vigil was at a loss to account for the deaths, but other sheep men in the community to whom I mentioned the loss are certain that it is due to the cobwebs hanging in the sagebrush and chico, of which they say there is an unusually large amount owing to the lack of rains to wash them away.

I thought that I was up to about all the hazards that attend the sheep business, but this is a new one on me. Is it merely a local superstition or has the theory a foundation in fact?--Santa Fe.

New Publication in Demand: "The National Forests of New Mexico," which will be known as Bulletin #240, the text for which was written by Mr. Kircher last spring with the assistance of the branch chiefs of the DO and the Supervisors of New Mexico forests, has been printed, according to advice from Washington. The Washington office issued a news story on this publication a few days ago which gave it so strong an introduction that requests for the booklet are coming in from all directions - from North Dakota; from Georgia, from New York, from Nebraska, and so on as well as inquiries from points near at hand, and the supply has not yet reached Albuquerque. The booklet is well worth the getting and as soon as this office has the stock from which to meet the demand, further publicity will be given. Copy for a similar booklet, "The National Forests of Arizona," is in course of publication and should be available not far in the future.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Pennsylvania Imports Lumber: Either the wasteful habits of the great State of Pennsylvania or the glamour of Jackson Hole is about to place the Teton Forest in the list of timber exporting forests. A local contractor has received an order for a bunch of logs to be shipped to Ligonnier, Pennsylvania, for the construction of a rustic lodge. Mr. Arthur Thompson, erstwhile patron of the Bar BC Dude Ranch in Jackson Hole, is the purchaser. We thought the balance of trade, after this exportation, would swing around more in favor of Jackson Hole; however, we have just learned that the Countess Gizyka is importing pressed brick for her residence here in Jackson.--Teton.

Fish Planting in Western States: Some interesting figures on planting of trout were brought out at the meeting of Western States Game Commissioners at Sacramento, California. Last year Montana planted 42,000,000 trout and 17,000,000 grayling. California planted 26,000,000 trout and Colorado 24,000,000. The planting in the States of Oregon, Idaho and Utah ranged from 10,000,000 to 20,000,000 each. There was a recognition by all the commissioners present that in order to maintain fishing, plantings proportionate to those of Montana must be undertaken.--S.B.L.

Ranger Station Burns to Ground: Recently, Mr. Mink was preparing some tar to repair the roof on the Ranger Station. In heating some of this tar on the kitchen stove, the can exploded, setting the house on fire and burning the station to the ground. The smoke was so severe that it was impossible to save any property belonging to Mr. and Mrs. Mink.

Mr. and Mrs. Mink have the sincere sympathies of the office force, and steps are being taken for an allotment to replace this station.--Humboldt.

Taken from Ranger's Annual Grazing Report: In answer to the number of game animals on District 5, this is what he has to say:

"60 deer
1 goat -- (The Ranger)"
--Weiser.

Expect to Advance: We note in the "June 30 Estimated Stand of National Forest Timber," that the Toyabe is credited with 2,811,000 cords of wood. After inspecting a sawmill on the Humboldt in the upper Jarbridge country, and seeing the type of timber used for lumber of various kinds, you need not be surprised to read something like "11,000 cords of wood, and the balance sawtimber" on the Toyabe's next report.

DISTRICT 5 - CALIFORNIA DISTRICT

Snappy Work: "W. E. Irving sent a note to the office with machine numbers of parties that were hunting in Middle Fork of Lytle Creek. Irving said he thought they had killed a doe, as that was about all the kind of deer there were in Middle Fork. Parties passed Ranger Station at very great speed. I phoned H. Lamb to stop them, but they got past him. Next morning I took my dog and followed their tracks up a small canon. I soon found two small fawn heads buried in the bottom of the wash. Then I tracked them and found their empty cartridges. I took this evidence to W. C. Malone, Game Warden, and we went to the District Attorney's office and swore out complaints. I went with Malone and we arrested Lee E. Rice at the substation in Rialto. We next went to San Bernardino and arrested George Woodruff at the P.E. substation, and put him in jail. We then got search warrants and searched their houses and found two deer carcasses hanging in a clothes closet of Woodruff's house. They were released on bail of $400." (Report by District Ranger J. H. Haydon of the Angeles National Forest.) Note: The termination of this case was an eminently satisfactory one; Rice was fined $75 and Woodruff $175, besides which each received a 60-day jail sentence (which was, however, suspended) and had his hunting license taken away, with the warning not to hunt or enter the Forest until July, 1923. Under "Publicity" Ranger Haydon states: "Published in two San Bernardino dailies and the Los Angeles papers. They were given a good roasting by Judge Kavanaugh and the court room was full."

Efficiency: While getting the evidence in another case, two sleuthing Forest officers found a camp fire merrily burning with the owner missing. Since they did not have a full load to the justice court, they sat down for an hour until Mr. August Codige of Visalia came in. He informed them that he had been out quail hunting. Fortunately for him, he had none. Slinkard and Brown patiently explained to him that they were short one man to make a full auto load to the justice and invited him to go along. He reluctantly accepted to go along and donated 50 kopecks to the coffers of the State of California on the following morning.--Sequoia.

Appreciation: Quotation from a recent letter from Geo. M. Cornwall, of the "Timberman" and father of the Pacific Logging Congress, to Col. Greeley:

"Just a line to say how splendidly Dr. Hofmann of the Experimental Station helped us at the Logging Congress at Tacoma with his wonderfully able and enlightening paper on the effect of atmospheric conditions in fire control.

"We are going to print it as a bulletin and place it in the hands of every logger in the five western States and British Columbia.

"Mr. James W. Girard, of Missoula, gave us a fine paper on tractor logging in the Inland Empire, and an address on the Missoula official wireless telephone.

"Altogether, your Forest Service men showed up splendidly and are a credit to your organization. I felt, seeing you could not be with us, you would like to know how the Congress, with its 615 registration, got along and the part the Forest Service played."

Big Power Transmission Project: The transmission line of the California-Oregon Power Company, from Prospect to Springfield, 115 miles, has been completed and the power turned on. This line passes through the Crater Forest for about eight miles and the Umpqua Forest for twelve miles. The cost of this transmission line was in the neighborhood of a million dollars. Work was commenced last spring and ordinarily it would have taken two years to finish, but the job was rushed through and completed this fall. The line is on two-pole towers, set about 500 feet apart and is built to carry 110,000 volts. A strip of timber 50 feet wide along the right of way was felled. Payment has been made for all timber felled on National Forest land. An interesting feature is the interference caused by the power line in Forest Service telephone lines, both inside and outside the Forest. C. M. Allen, telephone engineer, is working out the solution of this problem. This same company is considering the development of power on the North Umpqua River.

New Forms Needed: The Chelan Forest has felt the need of a labor contract for improvement employees. Something like the "D-6 Fire Fighters' Contract" of notebook size so that they could be easily carried and available when needed. Road and trail foremen could carry them and see that they were signed before an employee started work.

A similar form would be desirable for contracts of hire. These should be worded so they could be used for horse, auto, or boat hire. If any other Forest has a need of such forms the District office could order a supply for next season's use.--G.E.M.

Service Bulletin

U.S. FOREST SERVICE

(Contents Confidential)

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DR. FERNOW DIES AT TORONTO

Dr. Bernard Edward Fernow, author, pioneer educator, organizer of the forestry movement, and the first United States Forester, died on the morning of February 6 at Toronto.

Dr. Fernow was born in Posen, Prussia, in 1851, and studied under the famous Heyer and other noted foresters. He first came to this country in 1878 and soon took an active part in the forestry movement of New York State, where he formulated legislation establishing the Forest Reserve in the Adirondacks. From 1885 to 1896 he was Editor of the Proceedings of the American Forestry Association. Largely because of the activities of this association, the greatest piece of forest legislation so far adopted in our country was enacted - the law of 1891, authorizing the President of the United States to establish National Forest reserves. This act led to the creation of the present National Forests.

In 1886 Dr. Fernow's great work for the nation really began when he accepted the position of organizer and director of the forestry work of the Government for the Department of Agriculture, a position which he occupied until 1898.

During twelve years spent in Washington, Dr. Fernow kept in close touch with the forestry work in the various States, and there was little of State forest legislation passed during this time in which his opinion was not consulted. He secured the cooperation of many prominent men of science. Numerous bulletins and circulars, including monographs on White Pine, the Southern Timber Pines; results of tests and studies in timber physics, the first complete discussion of the metal railway tie as a possible substitute; studies on timber impregnation and other subjects, all of immediate value in wood utilization, are evidence to-day of the painstaking work of the guiding spirit which directed them and edited their results for publication.

Throughout the twelve years in the Bureau of Forestry, Dr. Fernow never ceased to write articles and addresses. In these years the larger part of two hundred articles and addresses, over twenty circulars, and over thirty bulletins and reports were prepared and edited.

In 1898 Dr. Fernow was called to Cornell to organize the first forestry school in the new world. Here he inaugurated the beginnings of professional education. After leaving Cornell he worked for four years as consulting forester. During these four years he continued the Forestry Quarterly; delivered lectures at Yale University, and started the forest school at Pennsylvania State College. In 1907 Dr. Fernow accepted an invitation to Toronto University and organized the first forest school in the Dominion. At the time of his death he was Professor Emeritus of that institution.

His well known "History of Forestry" is a masterpiece of its kind, covering the subject for both the Old and New World.

Three years ago, when Dr. Fernow retired from active teaching, there was published in AMERICAN FORESTRY a tribute by Raphael Zon to the father of forestry in the new world. To-day the words assume an added significance. "While the period which Dr. Fernow typifies is rapidly becoming history, his teachings and his contributions have the quality of permanence. They have been always a source of inspiration and guidance to the pioneers of forestry; they will be infinitely more so to the actual managers of our forest lands as soon as real woods forestry comes into general practice. As with any great teacher, it is not the kind of theory that he happens to advocate that really counts, but the ability to teach how to think in his particular field. Theories come and go, but the ability to orient oneself in the details of complex problems is a lasting asset; he who teaches to meet ever-changing problems, not by a ready-made theory or hypothesis, but by a critical attitude and ability to discern between the essential and nonessential, is building on a solid foundation. With him forestry was not merely theory, but a movement ever changing as life itself, and for him problems became soluble not in ready-made formulas, but in the forces, economic and natural, that are at work."

To Mrs. Fernow the Forest Service has sent the following message: "In this hour of sorrow may the thought console you that Dr. Fernow's work will never die but will be carried on as long as the Forest Service endures. The members of the Forest Service extend to you and your family their deepest sympathy in your loss."--T.H.G.

THE MATTER WITH OUR LAND EXCHANGE BUSINESS

By Clinton G. Smith, D-7

Mr. Kneipp, in a recent issue of the Bulletin, asks "What is the matter with our Land Exchange?" This partial answer is given on the basis of the Florida Exchange Act of July 3, 1916.

If it takes over two years to put an exchange through the Department of the Interior, the effect on the exchange business can readily be anticipated. With four exchanges pending since 1919, no exchanges have been offered since May, 1920. See following table of Florida exchanges to date:

Name of applicant	Date approved Agriculture	Area of Govt. land (selected)	Area of Priv.land (base)	Date patent Interior
Ewing, D. A.	6-7-17	80	164	2-20-18
Harrison, W. W.	7-16-18	3,513	7,373	11-10-20
Sutton & Harrison	12-26-17	749	1,603	10-13-21
Ferdon, C. B.	8-16-19	2,311	6,219	
McCaskill, R.E.L. (Flournoy Lands) (016510)	1-6-20	4,216	11,021	
Bryan, R. E.	11-18-19	2,200	7,107	11-3-22
Bryan, R. E. (Faircloth Land) (016511)	1-14-20	78	321	1-19-23
McCaskill, R.E.L. (Walton Land & Timber Co.) (016509)	1-6-20	4,904	13,502	
Rose, E. P.	1-26-20	2,440	6,100	
Ratio, 1 to 26	Totals	20,491	53,410	

CARRIER PIGEONS IN FIRE CONTROL WORK

Ranger Walter A. Estep of the Idaho National Forest is a pigeon enthusiast and his report covering the results of last year's work with them is very interesting.

"The past season on the Idaho National Forest, in addition to numerous successful trial flights, the carrier pigeons were flown from seventeen different lightning fires, and in every case made successful returns with the messages in time, varying from five to twenty minutes. Not a bird was lost on any of these trips, and they would have made a still better record had there been anyone at the Headquarter station to receive them, as several of the later fires occurred after the supposed close of the fire season and after most of the protective force had been put on improvement work.

CARRIER PIGEONS IN FIRE CONTROL WORK (Cont.)

"It is easy to estimate the saving in worry, time, trouble and money gained by an immediate and authentic report of the actual location and conditions existing at the fire, and this, too, without any loss of time to anyone working in connection with the fire.

"In addition to the actual fire reports received, the pigeons also brought in a signed affidavit in regard to a fire trespass case clear across the Ranger district in a half hour's time in order to catch the outgoing mail and save the delay of several days in its receipt. In addition to this, they carried a number of other messages of official importance.

"The best individual flight record of the season was from the Supervisor's headquarters to the Ranger's headquarters, a distance of twenty miles in twenty minutes. Another flight of twenty-five miles and over two mountain ranges was made in thirty-two minutes.

"An incident which occurred goes to show the inherent instinct of these birds. The Ranger doing the experimenting with the pigeons sent some young birds just off the nest and which had not yet learned to fly back to the remote Big Creek section of the Thunder Mountain area, in order that they might be established and used there. One of these birds was taken too far on its initial flight, and not knowing the location of its new home, it instinctively took the direction of the old home, a hundred miles distant, the outside of which it had never seen. This pigeon must have passed directly over its old home without recognizing it, for it showed up at Cascade on the same line of direction, but thirty miles farther on."

It is understood that at one time during the summer Ranger Estep was caught with several lightning fires on his hands at once in a very inaccessible and difficult region far from a telephone. He went to these fires alone, believing that they would not spread rapidly. After he was due to arrive at the fires, the lookouts kept reporting that they still existed and did not appear to be under control, and it seemed probable that reinforcements would have to be sent into him. Then a pigeon came in. Its message told of four fires in a rocky and difficult ground where control was slow and difficult. They were so hemmed in by rocks that they could not spread, however, and he would be able to handle them all by himself. That represents the type of work done by the birds constantly throughout the fire season.

HOPE FOR THE FUTURE

By H. I. Loving

The Federal Traffic Board, a branch of the Bureau of the Budget, is aiming to secure a uniform travel regulation for all Departments and independent governmental establishments. Copies of a report of its subcommittee on subsistence were recently distributed. The recommendations contained in their report will, if adopted, liberalize some of the present restrictions and limitations considerably. Many of the recommendations can be adopted under existing law; others, viz., those providing for increased per diem, either actual expenses or a fixed sum in lieu thereof, will require legislative action. A few of the changes recommended are: (a) "Maximum per diem allowance in lieu of subsistence $6.00, or actual subsistence expenses, not to exceed $7.00 per day"; (b) "Tips to waiters not to exceed 20¢ per meal"; (c) "Tips to bellboys and maids at hotels not to exceed 30¢ in any one day"; (d) "When time of departure from depot at headquarters is before 8.00 a. m., before 1.00 p. m., or before 7.00 p. m., charge for breakfast, dinner, or supper, may be allowed en route; or where time of return to depot at headquarters is after 8.00 a. m., after 1.00 p. m., or after 6.00 p. m., charge for breakfast, dinner, or supper, may be allowed en route."

THOSE DREADFUL GRAZING REPORTS

By Will C. Barnes, Washington

There has been more or less discussiom of the need for the annual grazing reports, complaints that they were difficult to make out, took too much time, and were of no particular value to anybody. With this idea we have never agreed. Perhaps we have been somewhat to blame for not having outlined to the field our ideas of just what a grazing report should cover, how long it might be, and what particular subjects could be discussed or left out. I have had this in mind for several years past but always dropped it, feeling it was a matter for each Supervisor to work out for himself, and that for us to discourage long reports might really work a distinct harm and result in mere bare routine statements of little value to anybody.

Some wiseheimer once stated that there were two classes of public speakers - one who had something to say, and the other who had to say something. Some of the Supervisors seem to approach the annual report work with a feeling that they have to say something, while the majority, I am delighted to say, seem to tackle the job with the feeling that they have something to say and are going to say it. It's a real pleasure to read a report of this kind.

There are a lot of things included in some of these reports which, while interesting, could be materially scaled down. We want to know something as to weather conditions, but we are not interested in a long table of rainfall statistics covering, perhaps, a large part of the State in which the Forest is situated. A report may show a heavy total precipitation on a Forest, including snowfall for a year, but if it all fell in the winter and none of it during the growing season, the statistics would be awfully misleading. Rainfall statistics should cover simple statements as to the timeliness of the rains, above or below normal, their results on the growing of the plants, etc.

Then again, there are many Supervisors who devote page after page to tables and statements of sales of livestock. I have one before me now which states that 1,000 head of mixed steers were shipped from the Forest, averaging so many pounds, and brought so many dollars per head. Such information is absolutely useless for our purposes because it can not be dissected so as to discover how much a yearling, a two-year-old or a three-year-old really brought, and that is what we need for purposes of comparing prices. Two good sales, showing ages, weight and prices, are worth two whole pages of rambling statements as to shipments of mixed bunches. Here's a dandy from the Routt: "August 15, Jones Cattle Co., 25 Hereford steers, 3-year-old, average 1100 pounds, sold at \$8.10 per cwt. Practically pure-blood stuff."

Here's one that might as well have been left out: "Steer market only fair, lambs brought a good price, weight below normal."

Again, many Supervisors go to great lengths in taking up each individual grazing unit on their Forest, discussing the situation on it not only of forage but the permittees themselves, and a multitude of other irrelevent details. These certainly are not necessary for the information of either the District office or this office, and really do not seem to have any great value to the Supervisor himself.

If each Supervisor will sit down and size up the making of his annual grazing report and put himself in the place of a reviewing officer interested in the larger details and not in the minutia of range management, local troubles, etc., he will have little difficulty in making a readable, meaty report and one which need not cover too many pages.

Did anyone ever get a letter from this end of the line complaining of the length of grazing reports? I don't think so. We always read every last line and appreciate the fact that report writing, like anything else, is a highly specialized business that not every man can do in just the right way, and not every Supervisor is expected to be one of "them d----d literary fellers."

Finally, let me emphasize this one main point. If you have something to say for an annual grazing report, say it just the best you know how, but endeavor to sat it concisely, plainly and intelligently.

WASHINGTON NOTES

Newlin Helps: No one who intends to build a house should fail to study "Recommended Minimum Requirements for Small Dwelling Construction," in which John Newlin, of the Forest Products Laboratory, had a hand. In 1921 Mr. Herbert Hoover appointed a Building Code Committee of seven members, Newlin being the only Government representative. After a far-reaching study, the committee has published this compact report to serve as a basis for standardizing municipal building codes for small houses and to aid the builder in building not only cheaply but well. Mr. Hoover calls the report a piece of "intellectual legislation" of unique character. It is published by the Department of Commerce.--W.S.

E. F. White, Supervisor of the Lolo in District 1, has been appointed Chief of Operation at the Forest Products Laboratory, Madison, Wis., to succeed L. W. Maudlin, who recently became business manager for the American Forestry Association. He will take over his new duties about February 15.

One More Big Reason: "The lumber industry owes it to itself to take the lead in its own perpetuation, as the industry ranks among the most important in the country."--Editorial in The Timberman.

A F. S. Author: The OPEN ROAD for January and February contain articles by Supervisor E. W. Shaw of the Absaroka.

Red Cross: The Forest Service memberships in the Red Cross here totaled $58.

FOREST PRODUCTS LABORATORY

Plugging Up Knotholes: Knotholes in lumber seem to have aroused special interest recently in various correspondents. Some want to fill the holes with a wooden plug, a few advocate some moldable material, and still others have variations of these methods. The difficulty seems to be that aside from the cost there is always likely to be a variation in the moisture content of the board so that the plug will either drop out or be forced out. The problem, of course, increases with the decrease in the thickness of the board.

Apparently there are several inventions on file for filling up knotholes. A recent genius says, "I have a process, that relates to removing knots in lumber and replacing them with inlays, that leaves a perfect surface for paint, enamel, and also the darker colored stains. This process is particularly adapted for use in raising the grades of sap gum, white pine, and Douglas fir, which are all infected with rotten or loose knots which in white pine and fir fall out or become loose when the lumber is dry. To date, I have only treated sap gum, but results obtained have been perfect. The knots are cheaply removed and the expense of operation is very low."

Carload of Logs from Alaska Here: The logs from the trees personally selected by Mr. Markwardt last summer have made the long trip from the National Forests of Alaska and are now being unloaded in our yard.

The nine species represented by the 78 logs are as follows: Sitka spruce, white spruce, western hemlock, mountain hemlock, Alaska cedar, Alaska birch, western red cedar, black cottonwood, and Balm of Gilead.

Tests will now be made on these species to determine their mechanical properties. Such data will not only result in the more extensive use of these species in Alaska, but will enable comparison with species in other regions.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

The Colorado Game and Fish Protective Association held its annual business meeting on January 19. The principal business was the election of officers for the ensuing year and a review of the report of the Legislative Committee which had been holding sessions in reference to proposed game legislation before the present session of the Colorado legislature. Among the things advocated by the committee and approved by the association were: a bill putting bear on the list of big game animals; deferring the opening of the fishing season to make it conform to the spawning season of the spring spawning species and appropriation for retaining ponds and the propagation of pickerel, bass, perch catfish, etc., in those sections of the State suited to these species; better law enforcement and a program of game refuges, and better protection for these refuges. Bills are now before the legislature covering all these subjects, and about nine new refuge bills are under consideration covering important sections of the mountainous region in the western part of the State. Officers elected for the ensuing year are Otis McIntyre, Colorado Springs, President; C. J. Clark, Denver, Vice President; and J. H. Hatton, Secretary-Treasurer. A board of directors of ten members was also elected.

1921 Delinquents: The record of the District shows seventy 1921 permittees who have not paid their grazing fees. A large majority of these are bankrupt and will simply have to be refused further consideration. A list has been sent the various Forests in the District.

District Forester Peck talked before the Colorado Stockgrowers Association on January 18 on the subject of stabilizing the stock industry and what the Forest Service is doing to bring about this condition, especially through the range appraisal and adjustment of the grazing fees. A resolution was passed requesting members to cooperate with the Forest Service in gathering information for the range appraisal.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Goatless Forest: The Coronado, for the first time in its history, has no goats - or sheep either, for that matter - in the authorization for the grazing of livestock. There never were many sheep on the Coronado, but considerable numbers of goats have been grazed in times past. The goat business, however, seems to have dwindled down to nothing, and with the lack of need, authorization for that class of stock has been withdrawn. The Coronado is the only D-3 forest with exclusively C&H grazing authorizations.

Dogs and Lions: Helping to render the Apache safe for livestock, the Biological Survey has been working one of its best hunters on that Forest lately. A story of success is given in an incident when five dogs belonging to the hunter stirred up three lions. All three lions went different directions, according to reports, but were all brought low. Dogs went by twos after two of the lions, and the third was secured by an old dog by himself. The hunter, Clay Miller by name, is credited with 67 lions in the last two years.

What Plots Show: In the spring of 1920 plots about one acre in size were fenced in three different brush range types of the Tonto. These areas were enclosed for the purpose of watching some of the changes of our ranges under grazing as compared to protection. Some of these changes take place slowly over a long period of years, others show up quickly. In every case such areas are of value to permittees and "permitter" alike as a basis for range utilization estimates. Even now the Tonto plots show two things of practical value:

1. "This season's forage crop of grasses and weeds is less than ½ as big as last year. (This is interesting when we remember that this year's rainfall at Roosevelt was over an inch more than last year); within limits, distribution is a bigger factor than total precipitation.

2. "The sod of Curley Mesquite has thinned a little this year even inside the fence. (This shows that poor growth years affect sod density even where it is not grazed.")

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Personally Conducted Law Cases: Every once in a while from some source or other comes criticism that the Forest Service is continually taking into court trivial cases which could be settled by meeting defendants half way and without resorting to legal proceedings. In District 4 this hue and cry occurs most frequently in reference to grazing cases. This probably for the reason that by far the greatest number of violations reported are of the grazing regulations.

DISTRICT 4 (Cont.)

The following table gives the situation year by year, and shows that we are gradually getting results ourselves in a greater number of cases, in 1921 only 4 per cent of violations being reported to the Department of Justice.

Year	Cases Handled	Administratively	In court
1921	254	96%	4%
1920	273	95%	5%
1919	181	93%	7%
1918	95	91%	9%
1917	89	95%	5%
1916	58	86%	14%
1915	52	85%	15%

New Regulations for State Lands in Idaho: Mr. George T. Marshall, of the Idaho State Land Board, has been in Ogden conferring with Forest officers regarding revisions of laws relating to the powers of the State Land Board. In consequence of the large holdings of grazing lands which the State Land Board is getting through land exchange with the Forest Service, it is becoming necessary to administer these lands somewhat in the same way that the Forest Service administers its grazing lands. In order to do this, the Land Board will have to be given certain powers, and regulations will have to be made somewhat similar to ours. Mr. Marshall is making plans for the necessary legislation along this line.

DISTRICT 5 - CALIFORNIA DISTRICT

And Lo, The Angeles' Name Led All the Rest: Once more we are rounding up the annual statistical reports, and as usual find that the commanding lead of the Angeles National Forest in special use work is maintained. On December 31 the Angeles had 2,478 special use permits in effect. 2070 of these, or 84 per cent, were recreation permits, 1875 being summer homes, 176 hotels and resorts, and 19 miscellaneous permits connected with recreation. These 2070 recreation permits cover about 1000 acres and bring in an annual revenue of about $55,000. What other forest use can even approach this figure from the revenue-producing standpoint? It might be incidentally mentioned that the Angeles issued 611 new permits during the calendar year, and that the special use receipts for the fiscal year 1923 will exceed $40,000.--L.A.B.

Howdy, "Shorty"! Paul D. Kelleter, Forest Inspector, Mayor of Kensington, Md., Past Potentate of the Mystic Shrine and general good fellow, is out from Washington taking a whirl at the Western districts. He visited New Orleans, Albuquerque and the Angeles Forest before arriving in San Francisco, and is now busily engaged in putting Operation over the hurdles. Mr. Kelleter will next visit the District office at Portland.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Kiln Drying Study: Since July the Forest Service has been conducting a study in cooperation with the West Coast Lumbermen's Association to determine the feasibility of kiln drying Douglas fir common lumber. The field work has been completed and from superficial analysis of the data, the indications are that such methods of handling common lumber are practical and commercial.

A kiln of the Wheeler-Osgood Company, Tacoma, Washington, was remodeled for the purpose. A total of seventeen kiln runs were made which required over 150,000 board feet of lumber. Various temperatures and humidities were employed to learn this action on the knots, which normally drop out during the usual air seasoning practice and by so doing reduce the grade. It is anticipated that kiln drying of common can be done at a lower cost per thousand and less degrade than for air drying.--C.W.G.

Not a "Dry" Talk: A difficult technical subject was "put over" in a successful and interesting manner to a gathering of hard-headed lumberjacks when Dr. J. V. Hoffman addressed the thirteenth annual Pacific Logging Congress in Tacoma recently. Dr. Hoffman spoke on "The Effect of Humidity on Forest Burning Conditions." His talk was replete with scientific fact and was ably illustrated with curve charts, yet it was delivered with a quality of human interest that held the attention of the practical loggers throughout and brought forth applause and favorable commendation at its close.--G.E.G.

Screaming Again: A cougar 8 feet from tip to tip was killed lately near the Black Buttes on the Umpqua by E. E. Harpham of Klamath Falls. "The cougar screamed when he received the deadly bullet," said Mr. Harpham, who used to be a member of the Forest Service. A 7-foot cougar was killed on the Umpqua by Fireman W. C. Curtis at the Black Rock Station. Mr. Curtis says he did not hear the varmint scream but it did a heap of growling.

DISTRICT 8 - ALASKA DISTRICT

The Cordova High School is using the Chugach library to quite an extent during the present school term. The advanced classes in natural science are using our copies of "A Primer of Forestry" as textbooks on forestry, supplemented by Bulletin "Forests and Forestry in the United States," issued for distribution at the Brazil Centennial Exposition. The teaching staff appears to have a very good general knowledge of forestry principles and the work of the Service, and they are being encouraged in the use of the office library.

Supervisor McDonald and Deputy Supervisor Pratt will spend ten days this winter in the District office at Juneau going over allotment and other matters. Mr. Pratt will also spend ten days or two weeks in District 6, principally in Public Relations work.

Forest Ranger Brady of the Anchorage district spent the holidays in his old home at Sitka, where he was born. He is the only native born Alaskan on the Chugach staff. Mr. Brady has charge of the only ranger district in Alaska having a fire hazard.

The Alaskan Engineering Commission will cut from the Chugach in 1923 about seven million board feet of timber, principally crossties, for the maintenance of the Government railroad. This material is taken under free use permit. If sold at the usual commercial stumpage rates, it would increase the timber sales receipts of the Chugach by nearly $10,000. Contracts for the cutting of this material have already been let by the Commission. Under the terms of its free use permit the Commission will not make final settlement with its contractors until the cutting areas have been examined by the Forest officer in charge and a release given by him.

Service Bulletin

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STABILIZING THE USE OF PUBLIC RANGES

by

Col. W. B. Greeley

(Extract of speech before American National Livestock Association.)

There are 175,000,000 acres, more or less, of unreserved public range which is still a free-for-all grazing commons without protection or regulation. Much of this range land is in the vicinity of the National Forests. Much of it has been largely depleted of vegetation by competitive and unregulated use. The deterioration of these outside ranges has greatly increased the pressure for National Forest allotments. It often leads to the crowding of unpermitted stock upon the National Forests. It has made our task of a satisfactory grazing administration much more difficult.

At the same time the condition of these public grazing lands is becoming more harmful and upsetting to the livestock industry. They are the free spoil of any freebooter or speculator. An effort to secure exclusive control over them is a legal felony. The inability of stockmen to control such lands often renders them powerless to fully control the use of other lands to which they are rightfully entitled. Whatever benefits the stock industry has gained in the past from free range on those areas are now, for the most part, more than offset by the deterioration of their forage and by the uncertainty and instability which they inject into the business. This is especially true of localities where seasonal conditions compel the use of unreserved public lands during intervals between winter ranch feeding and summer grazing on National Forests. As an Idaho sheep man put it to me last summer: "Two parts of my year's business are absolutely sure - the winter feeding on my ranches and my summer range on the National Forest. But the spring and fall range in between has become a plain gamble."

The experience of the last five years has, I take it, pretty well convinced the western stockmen that they can not afford to own and carry the large areas of low grade range lands, such as those now left in the open public domain, which are needed to stabilize their business. If this is true, it would seem a wise policy to retain these lands in public ownership and extend over them some form of protection and control sufficient to keep up their productivity and stabilize their use by the established stock growers of the region. In fact, I fail to see how the livestock industry can be put upon a stable footing in many parts of the west until this is done.

Many areas of unreserved public range adjoin National Forests and form parts of natural range units which lie chiefly within the National Forests. In scores of cases, local stockmen have petitioned to have such grazing lands added to the National Forests. In a few cases this has been done by Congressional action, but in many others it has been blocked by the opposition of the Interior Department. I believe that this situation should be met by a law which would authorize the President to add such grazing lands to a National Forest upon a petition from a majority of the local stockmen who use the range. Such additions should not be made under any color of timber growing or watershed protection but for the stated purpose of protecting and regulating the use of grazing land. Whatever may be done with the rest of the open public ranges, there can be no question that these strips and patches forming parts of natural range units cut through by a National Forest boundary can be handled most economically by the Forest Service.

As to the remaining public grazing lands which do not tie in closely with any National Forest, I advocate a law which would authorize the President to establish National Ranges upon petition from a majority of the stockmen now using the areas concerned. Here again, let the initiative rest with the men who use the range and who are in the best position to judge whether they will be benefited by public protection and control. In the administration of such areas after they have been established I would also recognize by law the participation of advisory boards of local users along the same lines as they have been recognized in the grazing business on the National Forests.

I may perhaps be pardoned for thinking that the Forest Service, with its 17 years' experience in working on these problems in cooperation with stockmen all over the West and with the organization it has built up combining practical grazing men with experts of technical training, is the best equipped Federal agency to handle a development of this character. I firmly believe that the Secretary of Agriculture - one of whose chief duties is to work out a national program for the most effective use of land - is the best qualified Federal executive to shape and direct such a policy. The Forest Service has steadily built its organization for grazing work - both investigative and administrative - on a par with its organization for timber work, and will continue to do so. If Congress and the stock industry want us to tackle this new job, we will give it the best we have; and we will be ready to expand our functions or broaden our official designation or take any other steps needful to give range administration its proper recognition.

But the essential point is not who will do the job; it is rather that the job be done. The question of jurisdiction is much less important than the need for this step in stabilizing the use and assuring the permanent value of all of our public ranges, and in making them all play their full part in creating a sounder and more prosperous livestock industry. I believe that the western stock business would be better off to-day if the bill for public range administration which was drafted by Mr. Potter and widely discussed about seven years ago had become a law, and I commend to your association the wisdom of some action along this line as an essential step for the future security of your interests.

AS IT LOOKS TO AN OUTFIELDER

by Ernest Winkler, D-4

In the good old days when as a Ranger I was struggling to learn the nomenclature of forest trees, wrestling with the formidable forms, thought it necessary to ride 30 to 40 miles per day to hold my job, was trying to teach the stockman or timber operator something I didn't know anything about myself, and posing in the little community where I lived as a bureau of forest information, together with my newly acquired wife and one baby, I thought the Ranger was the busiest man in the world. I still think so.

Then in the Supervisor's office, where the office hours were as long as the wife would refrain from calling a halt, or physical endurance would stand no more, I thought the District office consisted of an organization whose chief function was to conjure up some new freak ideas to cause the field additional worry. On this I've partly changed my mind, and that to the extent of taking the "conjure" and the "freak" out of it.

In the District office I thought I found the opportunities for creating trouble and disturbing peace of mind multiplied many times - Washington office and Supervisor - with importance in the order named. I haven't entirely changed my mind yet.

In Washington, I still have been unable to put my finger on the guys that cause the trouble. Here I find another source, none other than the Secretary's office and the "Board of Directors," the great Congress of the United States. The latter in particular are the ones here that create the heart throbs and hair pullings for the higher ups, and, believe me, they keep busy.

AS IT LOOKS TO AN OUTFIELDER (Cont.)

I am still not certain where the trouble lies. Perhaps there's some responsibility all along the line. Congress crowds the Washington office, the Washington office crowds the District, the District the Supervisor, the Supervisor the Rangers, and the people are crowding us all. Why not? What is it that keeps us busy other than the effort to reach the standard set all along the line? What is it other than keeping constantly busy that has developed the enviable record for accomplishment the Service enjoys and that is recognized not only by the entire Department but by the public?

Throughout my experience, from Ranger to a detail in the Washington office, I have found a constant line of earnest men and women striving to maintain and further develop the record for doing things. Let us hope that we will continue to be a busy organization. Are we doing unnecessary things? Many have implied that we are, but few, if any, have been able to point out where. That, however, is a subject for another story.

THE LAST STAND

By L. L. Bishop - District 7, Allegheny

"Hearts Content," an area of five or six hundred acres, belonging to the Wheeler and Dusenbury Lumber Company, contains the only remaining stand of old-growth white pine in the East, this valuable tree having long since reached the vanishing point in this section. The history of this stand dates back to 1809, when the families of Wheeler and Dusenbury first engaged in lumbering operations on the headwaters of the Allegheny. By 1850 relatively large timber holdings had been acquired by this company within what is now the southwestern corner of the Allegheny Purchase Unit and sawmilling was begun. The first mill was one of 21 mills operating on Tionesta Creek within a distance of 20 miles.

In 1865, after many years of unsatisfactory operation, Mr. N. P. Wheeler, Sr., became manager of the holdings and immediately put into effect constructive and far-seeing policies. Much waste was eliminated by the closer utilization practiced; high stumps were cut off and long butts which had been hitherto left in the woods were collected and shipped to a shingle mill, and other forms of waste were closely watched and transformed into useful and profitable products. After instituting reforms in utilization, Mr. Wheeler turned his attention to keeping fire out of the woods and, regardless of cost, any fire which even remotely menaced the Wheeler and Dusenbury holdings was fought to a finish. For 60 years this property has had the benefit of effectual fire protection and the present management is fully convinced that such protection has been more than justified by the results.

In 1919, when 32 acres of second growth was cut over, the operation yielded an average of 30½ cords of chemical wood, 26 railroad ties, and 125 board feet of sawtimber per acre. This second cutting was 35 years after the area was first logged off and did not include the hemlock, which was estimated to comprise 30 per cent of the stand. This company owns many thousands of acres of comparable young growth. Their entire holdings of 40,000 acres in its virgin condition averaged from 40 to 50 thousand feet of saw stuff, 8 cords of chemical wood, and 5 cords of hemlock bark per acre.

To-day, "Hearts Content" boasts of holding in its confines the last stand of virgin eastern white pine, the trees averaging from 200 to 350 years old. Single trees in this stand have cut as many as ten 16-foot logs and 5,000 board feet. A single one-quarter acre has been estimated to carry 50,000 board feet. This last stand is of very fine quality, cutting a large per cent of the higher grades.

The present management has profited by the lessons in close utilization and fire protection. A supply of natural gas has been developed and piped to the mills to be used as fuel instead of the sawdust which is saved and sold, shipped to Niagara Falls to reappear as carborundum. The smallest sized material manufactured at the mill is 1" by 1" by 14."

The results of the lumbering operations on this 40,000-acre holding have won Mr. Wheeler to the opinion that it would have been entirely profitable and practicable to have organized cutting on a continuous basis. It is expected, however, that this tract will be available for purchase by the Government at the end of the next 8 or 10 years, when this company will have finished its cutting and will begin operations in its vast holdings of redwood and other western species on the Pacific Coast.

ONE BRIGHT SPOT IN THE GLOOM
By Will C. Barnes, Washington

In the midst of a multitude of discouraging reports from our Supervisors covering denuded ranges, low rainfall, starving cattle and sheep, discouraged stockmen, drought, and misfortune generally, it is a joy to take up the Mono report covering grazing matters on that Forest for the past year. Here at least is one National Forest where, during the year 1922, the rainfall has been above normal, the forage excellent, the stock coming onto the Forest in the spring in fair shape, and leaving it in the fall in first class condition; to know that the cattlemen were able to spend several thousand dollars for blooded bulls; and that the sheepmen got excellent prices for their lambs and wool. Taking it all together, the stock interests in and around the Mono seem to be in every way in a most satisfactory condition as compared with other Forests and other parts of the country.

POWER PUMP AGAIN
By E. W. Kelley, Washington

Recently the Oakland, California, branch of the Evinrude Motor Company demonstrated the portable fire pump manufactured by the Evinrude Motor Company before several District Five Forest officers.

Here is District Five's report of the demonstration:

On January 25 the local agent of the Evinrude Motor Company demonstrated the Evinrude Unit and Centrifugal pump to a number of District office men. The demonstration was held at the San Lorenzo Dam.

The outfit consisted of the Evinrude two cylinder, two cycle, 4-5 H. P. gas engine with one Evinrude built in fly wheel Magneto, gravity feed carburetor, and a special easy starting device. The engine connects directly to a Viking 1½ inch high pressure pump. The complete outfit weighs about 99 pounds.

The pump was placed about 15 feet from the dam and about five feet above the surface of the water.

In the first test 500 feet of hose was laid uphill to a height of about 150 feet above the elevation of the pump. This threw a very intense stream sufficient to dampen any ordinary fire. It is estimated that the stream reached at least 50 to 60 feet beyond the nozzle and about 30 feet in elevation.

In the second test 1,650 feet of 1½ inch linen fire hose was laid out reaching a height of about 125 feet above the level of the pump. With a ½-inch nozzle, it is estimated that it delivered about 24 gallons per minute and threw a very excellent stream of water 50 feet beyond the nozzle. With this linen hose the hose friction was equal to probably 45 to 50 feet head, making a total head of at least 170 feet.

In the third test the hose was laid out about 950 feet at a height of approximately 30 feet above the level of the pump. This threw a stream at least three times as great as in the second test to a distance of about 100 feet.

1¼ gallons of gas will run this pump from three to three and one-half hours. It takes one-half pint of medium oil to one gallon of gas. The oil is mixed directly with the gas. This pump is a very compact unit and has every appearance of efficiency. It is hoped that this District can in the near future purchase three or four.

WASHINGTON NOTES

Value of a Woodlot: A woodlot on every farm, maintained under the rules of scientific forestry, drawn upon for fuel annually, would make about half of the population of Canada wholly independent of the coal miners and the coal mine operators in the matter of keeping the home fires burning.--Forestry News Letter Dept. Int. Canada.

"In" or "On?" In most Forest Service writing, things usually are "on" or happen "on" a National Forest instead of "in" it. There is so much timber on the Santiam Forest; there were such and such fires on the Modoc. John Doe is a Ranger on the Inyo. Is this usage correct? I doubt its correctness even in such old stand-bys as "on-and-off." Certainly if we were speaking of an ordinary forest, we should say "in." "On" must sound a little off to the layman.--W.S.

Gems from the Ranger Exam. Papers: "The two principal resources of the National Forests are lumber and shingles. Lumber and paper from the cottonwoods."

"Methods of chaining on level and hilly country differ: where the land is very rough not a great deal of chaining can be done, the sun hides behind high trees, which makes it hard to get a solar. Then the magnetic needle jumps around too much to get a line."

He Knows: Henry Hardtner is practicing forestry on 50,000 acres of cut-over land in Louisiana and paying the cost out of his own pocket. He knows what he is talking about when he says: "Anyone can grow trees - there are no difficult problems to overcome - trees will grow anywhere - and they grow night and day, winter and summer, drought and flood. It is a sure crop."--W.S.

FOREST PRODUCTS LABORATORY

Observations on Gluing Practice in the West: A number of plants which glue wood more or less extensively in the manufacture of doors, furniture, cabinet work, and other products, were visited by Mr. T. R. Truax during his western trip. Considerable information was secured on the cutting and drying of veneer and the gluing of the western woods. The western species which were being glued more or less extensively include Douglas fir, red alder, Oregon maple, Oregon ash, western cottonwood, western yellow pine, Sitka spruce, hemlock, and redwood. Douglas fir is cut into veneer for gluing in large quantities and used principally for doors and interior finish. Alder is used considerably for cores in furniture panels and is preferred for this purpose by most users of western species. Ash, maple, and cottonwood are also used in connection with furniture manufacture both in veneer and thick stock. Spruce is cut into veneer and glued into panels to a limited extent, while vertical grain spruce, hemlock, and redwood are used somewhat for core stock.

Industrial Courses Have Attendance of 26: The January courses given at the Laboratory were attended by 26 representatives of various industries. Most of these came from the Central States, but there were some who came from Atlantic and Pacific Coast States. In the seasoning course there were 11, in the gluing class 8, and in the box course there were 7 representatives. Enrollment in all courses was much cut down because of the business expansion in all these industries.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

The Department of Agriculture Exhibit at the National Western Stock Show in Denver was handled by the Forest Service and the Biological Survey. The Forest Service showed through a very realistic scene, the devastating effect of fire both on the forest and on wild life in the forest. Also there was a very interesting display of Colorado grasses and poisonous plants, and two models showing the results, respectively, of open herding and close herding of sheep. The Biological Survey presented models and mounted specimens illustrating the importance of the present predatory animal campaign in Colorado and the effort to exterminate prairie dogs and other rodents. It is estimated that approximately 40,000 visited this exhibit. Favorable comments were heard on all sides about its attractiveness.

The District Investigative Committee held its annual meeting in January. In addition to the representatives in the District office, this meeting was attended by Silviculturist C. G. Bates of the Fremont Station, and Deputy Supervisor Hunter of the Holy Cross. Projects of particular interest to Forest Management, which were approved for study next season, were the establishment of reproduction plots in cut-over and denuded areas, so that it will be possible to determine the success of our methods of cutting in securing reproduction and to know how rapidly our burns are reproducing. Also, it was recommended that plots be established in lodgepole pine cut-over areas trying out different methods of brush disposal.

Forest Examiner Johnson's Report on "The Influence of the Forest in Retarding Run-off as Brought out by the Pueblo Flood," which was printed in "Water Resources" for December, 1922, has been received in this office in the form of a reprint for distribution. A limited number of copies are available for this purpose.

DISTRICT 3 - SOUTHWESTERN DISTRICT

P. R. Opportunity: Supervisor Wales made use of it and achieved results. The narrative starts with an announcement by the Supervisor in a Prescott paper concerning the plan for handling Christmas trees. The teacher of a country school down in the desert country, fifty miles or more off the forest, read the announcement and was interested. She wrote the Prescott, stating that a tree would be greatly appreciated and while it would not be practicable to come for it, if one could be sent all expense would be gladly met. Deputy Munro arranged for a tree to be gotten out and sent. The affair apparently impressed the teacher and the school, for it was made the occasion for a general letter-writing lesson. The Prescott office has received no less than twenty. The composition and penmanship indicate that the lesson was handled by practically all of the grades while the subject matter shows that fire prevention and other forestry ideas had been discussed with the classes.

Tree Rings: That variations in the width of tree rings are determined by climatic conditions, and that climatic conditions in turn are closely related to solar activity is the theory being worked on by Dr. A. E. Douglas of the University of Arizona. In regions of meager rainfall annual growth agrees very closely with the precipitation curve. Thus it happens that the yellow pines of northern Arizona have provided excellent material for Dr. Douglas' study. Trunks of prehistoric pines recently excavated near Flagstaff at a depth of 16 feet below the present ground surface point to a much heavier rainfall in early ages than in modern times. The use of tree rings as an index of climate in periods antedating instrumental records has great possibilities in long range weather forecasting.

Forest Service an Asset to Bond Selling: A firm of investment bankers is sending out printed circulars to bond buyers in a market campaign on Albuquerque paving bonds. Among the Albuquerque assets that make the bonds especially attractive is mentioned the fact that Albuquerque is the headquarters of the Southwestern District of the Forest Service.

After It's Over: The one consoling feature about a vacation is the fact that you can get back to work and recuperate.--Santa Fe.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Grazing Experiments on the Minidoka: Supervisor R. D. Garver of the Minidoka has established a number of quadrats for the purpose of demonstrating the value of proper grazing season. At two places, one at middle, and the other at high elevation on the summer range, he has established three sets of quadrats, one quadrat in each set is entirely protected, one is left open to grazing, and the third is open to grazing during what is considered the ideal grazing season, which opens approximately two weeks later than the present season in force. At a lower elevation near the forest boundary there are also two quadrats, one enclosed and the other open to grazing the whole season long. These plots are placed where they can easily be seen by stockmen and others passing through the country. The idea is to show how much improvement can be obtained by the use of a grazing season opening at the proper date, and how close conditions can come to those obtained under complete protection by this means.

Studies of Fish Stomachs: During the fall the stomachs of a number of trout taken at Fish Lake were placed in formalin by the local Forest officers and sent to the Bureau of Fisheries for examination. The analysis of the stomachs shows that over 90 per cent of the food of the trout there consists of the scuds or so-called fresh water shrimps. The collections are to be continued next season. If the shrimps continue to form such a large proportion of the diet in a lake as productive as Fish Lake, it will indicate a remarkably high value for them as fish food. They are dependent on aquatic vegetation for food and shelter, so the value of such growth to fish production

Can You Beat This? Comes now Ranger McGinness claiming to have the most energetic permittee on the Forest. Said permittee on being "bumped" for his delinquent grazing fees borrowed Mac's bobsleds, went out on the Forest and stole a load of Government wood, which he proceeded to sell, and made prompt payment of his grazing fees. Does this come under S-29, "Emergency Use," or is it plain trespass?--Weiser.

DISTRICT 5 - CALIFORNIA DISTRICT

A Community Leader: In addition to acting as mayor, councilman, marshall, and moral censor of the Big Santa Anita special use tract, Ranger Hayward of the Angeles has been requested to dispose of the cats inhabiting the canyon because, as one of the permittees states, they are killing all the songbirds. What next!!

An Ethiopian Deer Story: Three men, one of them of African descent, appeared in the Sonora office a few days ago carrying a very small buck with horns just beginning to sprout. While driving an automobile between Standard and Sonora they had seen the frightened deer try to jump through a fence by the roadside, fall back to the ground and lie there apparently helpless. On examination they found that its spine had been injured, probably broken, just above the hips, and that the hind legs were paralyzed. Said the colored gentleman: "Boss, Ah craves a written puhmit before Ah kills this heah deah. If Ah terminates his misery mah own self along'll come Mistah Game Wahden an' fifty bones of mah hahd-earned money'll go to de Jedge. Ah wants safety fuhst - nothin' else but!"--Stanislaus.

"Ma Pettengill," made famous by Harry Leon Wilson in his SATURDAY EVENING POST stories, is said to be no other than Mrs. Martha Cooper Hughes of Monterey, one of the great landowners of the cow country. From her husband, John Cooper, a Monterey pioneer, she inherited thousands of acres, and in the process of giving her personal attention to her cattle business she has learned everything that this occupation has to teach. It is said that she can appraise a herd of cattle as fast as her cowpunchers can drive them past her and also, though no longer a young woman, that she can outdance any girl in Southern California.

Market for Pine Needles: M. R. Cord, head of a concern that manufactures pine needle products, has been negotiating with Siskiyou County's Chamber of Commerce with a view to locating a pine needle enterprise there. His company uses the oil from the green needles as an ingredient in their medicines, soaps, toilet preparations and other articles, and also manufactures mattresses stuffed with the dry ones.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Telling it in Billboards: During the past year the Oregon Tourist & Information Bureau (a State-maintained agency) entered a new field of advertising the State's scenic resources. It had painted and erected 5 pictorial signboards each 10 x 50 feet advertising Crater Lake, Oregon Caves, Mt. Hood, Columbia River Highway, Wallowa Lake Region, and the Blue Mountains. The Crater Lake sign was placed on a much traveled highway near Los Angeles; Oregon Caves on Pacific Highway, near San Francisco; Wallowa Lakes, near Salt Lake on Lincoln Highway; Blue Mountains near Pocatello, Idaho; Columbia River Highway on Yellowstone Trail near Spokane; and the Mt. Hood sign near Walla Walla. Four of these 5 attractions are located within National Forests.

What the Public Thinks: Quoted from a letter received from Mr. George E. Wright, Seattle:

"While I am writing to you I wish to take the opportunity of suggesting that more attention be paid to the scenic value of trails in their construction by the Forest Service. My observation leads me to believe that the persons who lay out these trails almost entirely ignore the scenic possibilities. Many times I have been over Forest Service trails which might have

What the Public Thinks (Cont.)
been swung a little to this side or that side without additional expense but with the result of perhaps carrying the trail towards a scenic viewpoint or near a waterfall or an interesting stream canyon."--A.O.W.

DISTRICT 7 - EASTERN DISTRICT

The Winter Carnival Idea was practically unknown in New England until 5 years ago. The Forest officers at Gorham at that time actively cooperated with the residents and business men of that town. The results were worthy of the efforts and everyone voted the carnival a decided success. Since that date many other towns have taken up the idea, and this year over twenty different winter carnivals are being held in New England. From the support given these carnivals, it is evident that they are now as permanent a celebration as the "round-up" is in the West. One sees "spills" at both celebrations.

To Honor War Heroes: The citizens of Brevard and Transylvania County, North Carolina, are now engaged in a movement to erect a memorial arch at the Davidson River entrance to the Pisgah National Forest and Game Preserve. They are soliciting contributions all over the county. The present design of this memorial arch calls for rubble masonry construction with bronze letters 12 inches high, "PISGAH NATIONAL FOREST AND GAME PRESERVE," across the arch. A bronze tablet will be placed on each of the pillars, and these tablets will bear the names of the men from Transylvania County who were killed during the war. The entire structure will probably cost not less than $1,200.

FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

Service Bulletin

U. S. FOREST SERVICE

(Contents Confidential)

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A NEW BILL FOR NATIONAL FORESTRY

by

Herbert A. Smith, Washington

The latest form of proposed Federal legislation looking to a national policy of forestry was introduced into Congress by Representative Clarke of New York on February 8, and referred to the Agricultural Committee. It is notable on two counts: It replaces the Snell bill as the measure which the former supporters of that bill now wish to see enacted, and it has the hearty approval of President Harding himself and therefore stands before the country as endorsed by the administration.

The readers of AMERICAN FORESTRY will recall that hearings on the Snell bill were held by the Agricultural Committee of the House of Representatives early in 1921, and again in January, 1922. They will also recall that these hearings brought out a sharp division of opinion among foresters and other advocates of Federal legislation for a national policy of forestry. This division centered mainly on the question whether the principle of regulation of privately owned forests should be applied directly by the Federal Government, as the Capper Bill contemplated, or should be sought through encouraging the enactment of State laws by offers of Federal cooperation. The Snell Bill also came in for criticism from some advocates of regulation on the ground that its terms were too indefinite to bring about any regulation at all, and that it was at least doubtful whether all its supporters believed in regulation.

In the hearings held a year ago, Chief Forester Greeley suggested to the Committee that the program should be modified so as to include only such features of the Snell Bill as could command a substantially united support from the friends of forestry. He advocated a law providing for adequate protection against forest fires through cooperation between the Federal Government, the States, and private owners; for Federal cooperation with States in furtherance of reforestation of denuded lands; for more rapid enlargement of the National Forests through land purchases and exchanges; and for addition to the National Forests of all remaining public forest lands, reserved or unreserved, wherever this is practicable.

To this list of immediate objectives the Forester subsequently added enlarged provision for investigations, experiments, and demonstrations in the interest of better use of forests and forest products. The Secretary of Agriculture in his annual report last fall urged the same legislative program. The Clarke Bill substantially embodies this policy. President Harding's approval of the provisions of the Bill in a letter to Congressman Clarke following its introduction makes it in the fullest sense an administration measure.

While its enactment in the short time before the present Congress expires is impossible, its formulation is of large significance.

"PENNY WISE, POUND FOOLISH"

By The Fire Eater, D-5

One of the biggest problems that the Forest Service faces to-day is to reduce the number of man-caused fires which occur each year in the National Forests. If this is true, and for once it seems that we are all unanimous on the proposition, isn't it about time we were digging down to get at the root of the evil? Each year we spend considerable time, to say nothing of gray matter, figuring out new and improved methods of fire detection and suppression, control, elapsed time, tools, forms and what not; and in the face of all this the number of fires due to human agency is steadily increasing. What's wrong? Have we been putting the cart before the horse?

Who sets the fires, anyway? Usually we charge them to railroads, campers, smokers, hunters, incendiaries, brush burners and the like, which, boiled down to the essence means "mere man." He is the fellow we ought to be getting after, and a 100,000,000 more of his kind. There is where the seat of the whole trouble lies, and there's where we must apply the cure. And that cure is not going to be brought about, either, by buying long-handled shovels or putting on an extra force of forest guards in the dangerous season.

There are just two ways you can "get under a man's hide," so to speak, on the fire problem. One is through the process of the law, and the other is by education. The first is effective but harsh, and the second more easy to swallow, but not so effective, unless you keep everlastingly at it. But education, I believe, is the most effective, because it appeals to the better sense and makes a more lasting impression.

Granted we must educate the public to be careful with fire, let's look over the credit side of our balance sheet in this regard. Here we find fire signs, illustrated lectures and addresses, booklets carrying fire warnings, cooperative agreements, press items, personal contact, and - - and - - Not many of them, are there, when you come to count them up on your fingers? And what have we put into all these in the way of money? Why, nothing much except a few odds and ends of dollars that may be lying around loose in the Districts or at Washington. These are the things that have heretofore always been put down at the bottom of the list - whether it called for time, money or work. We have been too busy selling timber and forage and fighting to keep from burning it up to bother much about educational and informational work, and little things like personal contact and getting the man on the street wholeheartedly behind us in the fire game.

Isn't it time we were putting our best foot (and a bit of cash) foremost on this part of the job? "A penny saved is a penny earned," they say, but it sure isn't when it comes to the fire game, especially if you save it through failing to educate the man who sets the fires.

ANOTHER KNOCK-OUT FOR "LIGHT BURNING"

By Ward Shepard, Washington

"The man that deliberately burns the woods year after year is not only doing an injury to himself, but he is burning his children and grandchildren out of the lumber business, the grazing business, and the farming business."--S. W. Greene, Supt. of Coastal Plain Exp. Station, McNeill, Miss.

WHAT IS THE MATTER WITH OUR LAND EXCHANGE BUSINESS?

By P. G. Redington, D-5

The article by Mr. Kneipp in the January 22nd Service Bulletin is written with a pessimistic tone which is not characteristic of the gentleman. Perhaps he was fishing for a rise. In order to cheer up the Chief of Lands, we hasten to present the situation which confronts us in the California District.

No doubt we all had visions of a "land office business" in exchanges as soon as a general law was effective. Looking back, however, on all similar movements of this character we find that, like a rolling snowball, they start slowly but rapidly acquire size and speed. In the West, at least, the acquisition of private lands for Forest purposes is something new. We have neither established prices nor procedure. Consequently, many owners of the kind of land we want to acquire are sitting back waiting for some one else to start the ball rolling.

Immediately upon notice that the general land exchange law was effective, we received a number of offers to exchange. Investigation showed, however, that these first comers were all looking for a deal of distinct advantage to themselves, and the fact that all of this kind of offers have been given a cold shoulder has apparently seeped through with a consequent discouraging effect on others, if absence of applications of this kind is an indicator.

Later we began to receive offers that meant business, and right now we have on file applications that involve 90,000 acres of base lands, about 75,000 acres of which are cut-over lands of the kind we want to acquire.

Now these 75,000 acres, with the merchantable timber remaining on them, are easily worth $250,000. All of these people want stumpage in exchange for cut-over lands.

Our timber sale receipts last year were $663,000, and, according to the Manual, we should not ordinarily approve land exchanges within any State during any single year that will involve a reduction of more than 10% in timber sale receipts. Ten per cent of $663,000 is $66,300, and 4 times $66,300 is $265,000.

Therefore, if only the exchange propositions now on hand are approved and the Manual restrictions are complied with, we can not handle any new business for the next four years. Such being the facts, is it desirable to go out and drum up a lot of new exchange business, with the resultant increase in field and office work, when we have in sight more than can be handled in accordance with the regulations? Also, under these circumstances, is it good policy to go out and drum up new business when we are not in a position to go through with the exchange without considerable delay?

TAGGING THE ELK

By W. C. Barnes, Washington

For some time the desirability of identifying the various bands of elk in the Yellowstone region has seemed important if we are to understand their yearly range movements and learn as to possible change of habitat. To this end the matter was taken up with the Biological Survey and the Park Service, with the result that the Biological Survey has purchased and forwarded to the elk feeding stations in the Jackson Hole region and also to the Park people a large number of metal tags which will be placed upon the younger elk as they come into the corrals at Gardiner and Jackson for feed during the winter. These tags are numbered and dated and will be placed in the ears of the animals in the hope that whenever a tagged animal is killed by hunters or found dead from other causes, the tag will be taken from the carcass and forwarded to the Biological Survey in order that a check may be made of the particular animal from which it was taken.

There is a firm belief in the minds of many of us that at the present time some of the Jackson Hole elk are migrating eastward over the Continental Divide and down into the headwaters of the Shoshone River east of the Park. There is also a general belief that there is a direct intermingling of the Jackson Hole herd with the Park herd in the northern part of the Park. This tagging business will enable us to learn something about these movements and will undoubtedly be of great value in the working out of future plans for the improved management of the elk herds in that vicinity.

AGAIN THE OLD ORDER CHANGETH

By C. F. Korstian, Appalachian Forest Experiment Station

For many years hemlock bark, so far as the writer is informed, was the only coniferous material used in the tanning industry in this country. It is, therefore, of interest to find an extract plant which has been using red spruce bark for the production of tannic acid. This plant, which is located in West Virginia, has been obtaining yields of 9 to 11 per cent of tannic acid and occasionally as high as 12 per cent from the spruce. Because of peculiar conditions connected with the administration of this operation, the spruce bark is commanding $14 per ton, $2 more than hemlock bark - a differential occasioned in part by the greater cost of exploitation of the spruce bark. Although the extracts from both species are made to 25 per cent tannin, that from the spruce is lighter in color than the hemlock, due

AGAIN THE OLD ORDER CHANGETH (Cont.)

possibly to the higher percentage of non-tannins. The extract sells at about 1½¢ per pound in the liquid form and 5-6¢ in the powder form. There is still some prejudice in the trade against the spruce extract, although one leather concern has been purchasing all spruce extract.

THE EDITOR SAYS:

This magazine has attained an ee-normous circulation and weekly gives much joy to a wide circle of readers. However, as Horace Greeley would have said, you can't run a paper on hot air, and we are now advertising the fact that a right smart lot of our readers haven't paid up their subscriptions for 1923.

Furthermore, the field season is headed our way, and we're afraid it will prove an unanswerable alibi against said payments if we don't head it off. We wish, therefore, to ask that all delinquents kick in with contributions that will tide us over the lean months this summer. The editor will appreciate them and can attend to his job much more cheerfully than will otherwise be the case. Selah!

WASHINGTON NOTES

Tempus Fugit: Observant readers of the Minutes of the Service Committee may have observed that these meetings recently passed the 1000 mark. The Committee thus gets into the class of talkative Scheherazade with her thousand and one Arabian Nights.

As Shakespeare hath it,

> "Like as the waves make toward the pebbled shore
> So do our MINUTES hasten to their end."

But he was wrong. The end is nowhere in sight.--Smoke Chaser.

A Glorious Feeling: A certain wise man recently received a letter from the Income Tax people. He studied it over carefully before opening. "Did he fudge on his last return? Had he left out some income items which those gumshoers in the Income Tax division had dug up on him? What was the penalty for such tricks?" These and several other questions romped merrily through his brain. The letter was opened as gingerly as if it was known to hold a bomb or sentence of death.

His worst fears were N O T realized. "Innocent as a baby" was his mental comment. From that official letter dropped a Treasury warrant for exactly 20 gold dollars. He was informed that a check of his return showed an error in his favor of that amount which was herewith remitted, etc., etc. Oh, Boy! this aint such a bad world after all. What a fine day it is to be sure.--W.C.B.

"Kosher," an interesting article by Will C. Barnes, appears in the January issue of THE PRODUCER. The article deals with Mosaic law as it affects forbidden and permitted foods.

FOREST PRODUCTS LABORATORY

After Taking One Dose: "Yours of Jan 19th has been received in regard to different hard woods and the strength of the same, and so forth. I thank you kindly for your prompt reply to my inquiry.

You ask. Do I require any more information, I will say. No thanks.

Though I say no thanks. Still although I have said so I must admit that I never knew that you people were as well informed on wood as you are till I read your circulars. And as I have stated in the foregoing that I thankfully decline any further information on wood. At the same time I was wondering whether or not you people could give a cause why the top of the hemlock-tree always leans to the east. I have noticed it in northern forests. And even in Washington, D. C. where the trees had been transplanted.

But I will ask you to please go to no trouble in the matter for my sake.

So you need not reply to it."

FOREST PRODUCTS LABORATORY (Cont.)

Get Burbank on This Job: "Has there been any attempt made to cross Jack Pine with White Pine? It occurred to the writer that if it would be possible to do this there will be vast areas of barren land which could be made productive for a better tree than Jack Pine. If we could get the good qualities of the White Pine combined with the wonderful reproduction of the Jack Pine, it will sure make some tree."

This recalls part of a talk given at Battle Creek, Michigan, by Dr. Kellogg of sanitarium fame, in which he referred enthusiastically to the possibilities of promoting health through proper food, if all the forest trees could be crossed with nut trees, so that edible nuts as well as timber could be produced.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Supervisors' Meeting: The Supervisors' Meeting was held the week of February 5 to 10 and all the 26 Supervisors were present. The papers were well prepared and thoroughly discussed.

All the Supervisors and visitors were guests of the Federal Field Club at luncheon on Tuesday, February 6, and before the Denver Commercial Association at noonday luncheon Friday, February 9.

It is interesting to note that of the 26 Forest Supervisors in District Two, 12 are members of local commercial clubs, 4 are Rotarians, 3 are Lions, 1 is a Kiwanian and 1 a Kanotin. Total of 16 are members of commercial or some one of the service clubs mentioned.

The following were guests at the Supervisors' Meeting: Cros. Hoar, in charge of Weeks Law cooperation in the Lakes States; C. G. Bates, Silviculturist; J. Roeser, Forest Examiner; R. D. Garver, Supervisor Minidoka N. F., D-4; L. C. Stockdale, Assistant District Forester D-1; P. D. Kelleter, Forest Inspector; I. F. Eldredge, Forest Inspector; Smith Riley, Biological Survey.

Nebraska Lectures: H. N. Wheeler, Chief of Public Relations, was in Nebraska during January delivering lectures on forestry. He talked to various organizations, high schools and colleges, reaching 10,500 people in 16 towns. The itinerary was arranged by the Nebraska State Forestry Association. The lecturer emphasized especially the shortage of timber, the great need for reforestation and the particular opportunities in Nebraska, pointing out especially the work that is being done by the Forest Service in that State. There was the keenest interest manifest and the newspapers in each town gave considerable space in news items and also in editorials.

DISTRICT 3 - SOUTHWESTERN DISTRICT

How Exhibits Pay: At one of the Southwestern fairs last fall a building contractor, after viewing the part of the Forest Service exhibit that pertained to the Forest Products Laboratory and talking with the man in charge about timber testing, stated that had he known about the tests of dimension timbers that had been made by the Laboratory and had had a table of comparisons, that he would probably have saved close to a fifth of the dimension lumber he had put into a job he had just completed. Not knowing just what sizes of various kinds of lumber would be necessary to carry given weights, he had put in over sizes that had to be milled especially and at special cost in order to be sure. His margin had been figured so close that the extra cost made the job a loss when a saving of even a sixth, he stated, would have made it pay out and anything more would have yielded a profit.

Normalcy: The multitudinous circumambulations of the property checker among the labyrinthine anfractuosities of the District Office are ended. For a time he wielded a wicked 2 H but the strain is over. Oh! these property returns. As a whole the check was a success. Many unknown articles were located. It was reported that a keyhole was missing in Lands, but on further investigation it was found wrapped around an escaping recreational plan. Considerable difficulty was encountered by the carelessness of stenographers in not getting a correct count on the staples in the Hotchkiss fasteners.

DISTRICT 3 (Cont.)

Normalcy (Cont.)
This resulted in a failure of minds to meet in the balance sheet. This apparent discrepancy, however, was partially offset by the discovery of 10,000 gem clips in various stages of repair bravely supporting range appraisal maps.

Following the drive a "no soliciting" sign which had been marked as missing was located in "S.". Thirty-eight sturdy thumb tacks could not be traced, but it finally developed that the property checker had half soled his shoes with them. The procedure was justified by the large amount of duplicate travel. The average quota of pencils per man per year is again a total wreck due to the extra numbers used in the check.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

The Forest Clerk
(With apologies to Lowell)

O'er his reports, the musing forest clerk,
Beginning doubtfully and far away,
Just lets his figures wander as they list,
Then takes a long vacation - without pay.--C.J.R.

Brush Burning: Supervisor Garver, of the Minidoka, reports an average cost of $.22 per M. for burning. The character of the brush, its location, age and weather conditions were factors influencing the cost. Lodgepole brush piled in the open, easily accessible and with favorable weather, cost $.06 per M. for 145 M. A torch was used and the ranger rode from pile to pile on horseback. Burning Douglas fir brush was done for $.15 per M. in dense stands. Piles 3 or 4 years old were difficult to burn and ran up the costs abnorally.

Grazing Form: Supervisor E. J. Shepard of the Boise Forest is supplying all his sheep permittees with a form of notice so that when a herder's camp is moved he completes the form, showing when he arrived at that particular camp, when he is moving and to what point he is moving. The Supervisor states that this form has proven helpful in getting better sanitation of camps, in preventing camps being kept too long in one place, and in the matter of locating camps.

Idaho Meeting: District Forester R. H. Rutledge recently attended the annual meeting of the Idaho Horse & Cattle Growers' Association at Boise. The meeting was well attended and enthusiastic. One of the best speeches of the session was by Mr. W. D. Swendson, Commissioner of Reclamation for Idaho. He pointed out the absolute necessity of maintaining proper cover on the hills and mountains which form the watersheds above the big reclamation projects of Idaho. The matter was presented from an engineering standpoint, but very clearly and simply. He made it clear that the very existence of agriculture in southern Idaho depended upon the maintenance of this watershed cover.

DISTRICT 5 - CALIFORNIA DISTRICT

Amen, Brother! The feeling against discarding the old pine-tree badge is very keen here on the Sierra Forest. I feel that a substitute for this badge, which has stood for the principles of the greatest organization of idealists in the western States, will be a serious setback to the morale of the Service. I believe the entire District will back me up in this belief. It is my personal opinion that as an organization we might be able to influence the Secretary to reconsider this proposed change.--Sierra.

A Desirable Citizen: A report from the Angeles on a fire last summer was supplemented by the following statement: "Henry Jacobs, of 1315 Shatto Street, Los Angeles, voluntarily fought this fire; when I suggested putting in time for services rendered he objected, saying he was glad to have the opportunity to offer his services for such a cause."

They Tag Them on the Angeles: Three water companies, known as the "Committee of Nine," and interested in the San Gabriel Canyon on the Angeles Forest, had printed a supply of these cards:

Date____________ Auto No.________
UNITED STATES FOREST SERVICE
Auto Tag
REGULATIONS---IMPORTANT---READ CAREFULLY
Did you EXTINGUISH your FIRE with WATER
and then COVER with DIRT?
Did you BURY your PAPERS and camp REFUSE?
The Law PROVIDES heavy PENALTY for NEGLECTING to do so.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Good Dope, D-1: Lowdermilk and Girard's study of slash disposal (Service Bulletin of October 9, page 2), has given us just the material we have been wanting. For some time we have had a notion that western yellow pine slash might be disposed of by the "burn as you go method," just as they do in the Lake States, but never having been tried the "practical ones" said it wouldn't work here. Now we thank D-1 for the information that it will work in certain sites. It appears that there is about a 10-cent differential in cost in favor of the piling and burning method. Can D-1 tell us whether there is not a saving in the cost of logging under the "burn as you go method," and if so, how much it amounts to? Perhaps it would be enough to really make the "burn as you go method" cheaper to the operator, everything considered, and if so, for certain seasons of the year it surely has many advantages over the piling and burning of brush.--T.T.M.

A Tribute to a Superannuated Pack Mule: The following was found in a Rainier Ranger's files attached to correspondence relative to the disposition of an old mule:

"Kirk:- Dispatch old Noah to the Green Elysian Pastures beyond the River Jordan. There are no burdens there to carry.

"Some day I, too, shall come to the end of the long trail and shall camp on the broad plains beside that mighty stream. Then will I look about for the homely frame and honest countenance of this friend of man. Ed."

A Big Bug Meeting: A meeting was held in Portland last fall for considering ways and means of enlarging the pine beetle investigative work of the Bureau of Entomology and for expansion of the pine beetle control operations. In addition to representatives of the District office, the following were in attendance: C. S. Chapman, Western Forestry and Conservation Association; J. F. Kimball, Klamath Forest Protective Association; J. O. Howarth of the Klamath Indian Reservation; and Messrs. J. M. Miller, J. C. Evenden, and F. P. Keen of the Bureau of Entomology.--A.J.J.

DISTRICT 7 - EASTERN DISTRICT

A Cautious Visitor: "Can you inform me of any murders that have occurred on the Forest reserve or any accidental deaths that are doubtful and cause of deaths or accidents not proven and suspicious of murder; also has there been any hunting accidents by shooting or any bodily harm and if so was it proven accidental or unknown or was harmed person shot by unknown persons or assaulted by unknown persons? Name all cases and if any or all persons were black negroes or white whites and cause of trouble. Negroes are hated in the South, also bad men of both colors are very common in the thinly settled States or woods and settlements of Florida and they boss the woods and waters. I have had a little experience there and got away with my life only and some of these men are rich and some are poor.

"Can you refer me to any guide in Florida who will inform me about these matters and can you refer me to guides you can recommend who you know to be honest men and not scoundrels who will lie, cheat, steal, deceive, and especially murder campers and hunters? Can you inform me of any place where it is safe for a small man to gather Spanish moss alone in the woods?"

It is Estimated that 20,000 people used the White Mountain Forest for recreational purposes on Labor Day, September 3, 1922. The National Forest register for 1921 at Glen Ellis Falls gives a total of 10,430 people who visited the falls during the 1922 season and of course the entire visitation did not register. In this record were represented 41 States, Alaska, Porto Rico and 14 foreign countries. From May until August 10, 1922, the registration at this point was 7,759. Applying the 5-1 ratio used out West this means that 50,000 or more were visitors at one of at least a dozen equally popular points within the White Mountain Forest during this season.

DISTRICT 8 - ALASKA DISTRICT

Fox Farms: Present regulations require all fox farm permittees in the Alaskan forests to post notices in conspicuous places about their islands. The Service furnishes a neatly printed cloth sign for this purpose without cost to the permittee. Islands under permit for fox raising range in size from a few acres to as much as 10,000 acres or more. With these signs posted at all possible landing places it will eliminate the possibility of trespassers springing the time-worn alibi that they did not know the island was occupied as a fox ranch.

This industry has grown by leaps and bounds on the coast of Alaska the past few years. All the suitable islands on the Chugach are now occupied, and applications continue to reach the office in almost every mail. If any of the Forests in the States have a few odd islands that they don't know what to do with, the Chugach can make good use of them.

All islands are being appraised this year, and before another season a new rental schedule will probably be put into effect.--L.C.Pratt.

A PEELED BIRCH TREE

Defaced it stands! I do not know your name,
Who peeled this birch-bark tree, but ah, the shame!
You wanted on a bit of bark to send
A maudlin little message to a friend?
To make a napkin ring, or some such trash?
And so with pocketknife you needs must gash
A ghastly wound, and peel a birch-bark tree.
Out of my thoughts, Oh you, who e'er you be!

--Margaret Clarke Russell.

Service Bulletin

U. S. FOREST SERVICE

(Contents Confidential)

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FORESTRY AND OUR LAND PROBLEM

By Henry C. Wallace, Secretary of Agriculture

American agriculture has received a terrific jolt during the past four years. Changes both at home and abroad brought about by the war and by economic developments since the war make it necessary for us to resurvey our agriculture. Those of us who are living pretty close to the farmer and his problems during these trying times have become convinced that the expansion of cultivated land in the United States is due for a slowing up, that tillage will have to be contracted on a lot of the poor land along the margin of successful farming, and that for some time to come American agriculture will tend to concentrate capital and labor upon the best soils and in the regions most favorably located in relation to the principal food markets. We must find a profitable crop which can be grown cheaply, with little labor, on land which the plow will pass up. On much land of this kind Nature is ready with the crop - timber; and the needs of the day are ready with the market.

Long before the great war reset the stage on which the American farmer must play his role, the necessity for plan-wise growing of timber as a staple crop was very clear. An enormous acreage of logged-off land had piled up on which there was not the remotest prospect of cultivation. It is still piling up at the rate of four or five million acres a year. The abandonment of plow land in a good many States was throwing other millions of acres out of employment and partially depopulating the regions which contained it. The pasture pine in New England and the old-field pine of the South bear testimony to the reversion of large areas of plow land to the chance forest sowings of Nature. In the decade between the last two census years the area under cultivation decreased in 19 States. New England lost 32,000 farms with a shrinkage in improved farm land of 1,140,000 acres. New York, New Jersey, and Pennsylvania lost 43,230 farms. The old order of land use was changing and is still changing in many of the densely populated States of the East. A new order of land use must take its place. The realignment of agriculture forced upon us by the great war will give it tremendous impetus. I can conceive of nothing more important than an intelligent coordination of rural effort that will afford profitable crops for lands which can not economically be tilled.

And just as the land economist was wrinkling his brow over this problem came the national need for timber knocking at the door, indeed bursting right through it. While the old order in American farming, under which men reached out constantly for more raw land, has changed into a new order which impels contraction, our national timber supply has been silently and steadily disappearing. One forest region after another has been swept over. The average carload of lumber has had to be hauled farther and farther from the sawmill which made it to the farmer or city man who put it into his home. Last year, I believe, the country hauled something over two million carloads of lumber an average of 485 miles and paid $275,000,000 in lumber freight bills.

FORESTRY AND OUR LAND PROBLEM (Cont.)

And meantime our dependence, as a people, upon our forests has increased enormously. We use five times as much forest-grown paper per capita now as we did 30 or 40 years ago. We manufacture half of all the lumber produced in the world and use 95 per cent of what we manufacture right here at home. American factories make more things out of wood than the factories of all the rest of the world combined and use more wood between them than the factories of all the rest of the world put together. Every year our keen business men and scientists discover how to make new things from wood to supply human needs. Our national life and commercial supremacy have been built up upon the liberal use of forests - and our forests are rapidly disappearing.

The answer is so plain that he who runs may read it. Here are two big birds of ill omen to be killed by one stone. We can put our unplowed acres to work growing a profitable crop for which there is no glutted market; repopulate our deserted forest regions and abandoned farm districts; give both the earth and the people something to do; and meet the impending shortage of forest products by growing wood, east, west, north, and south, as part of a rational scheme of land use, with somewhat the same intelligence and skill that we put into the growing of cereals and fruit. National reforestation should command the interest and support of every thinking American citizen. (To be continued.)

STUMPAGE VALUES

By E. E. Clapp, Washington

For the 10 fiscal years 1911 to 1920, inclusive, the average value of timber cut in commercial sales was between $2 per M and $2.25 per M. The fluctuations were narrow, with low points in 1914 and 1917 of $2.05 and $2.11, respectively, and high points of $2.25 in 1911, $2.16 in 1916, and $2.24 in 1920. Since 1920, however, there has been a noticeable increase in the average value of timber cut in commercial sales, culminating in a figure of $2.59 per M for the calendar year 1922. To a considerable extent this increase is probably due to the very large increase in the volume of yellow and sugar pines cut in District 5, but there has also been a noticeable stiffening in the price of white pine in District 1 and some increase at least in the average price of Douglas fir in District 6, as well as of yellow pine in the eastern part of that District. It seems doubtful whether the average value of timber cut will go below $2.50 per M in the future, although cutting on large sales of pulpwood in Alaska may tend to offset further increases in the average value of timber cut on all Forests, or even to cause temporary reductions in the average. The cutting of large quantities of low-priced material, such as acidwood in District 7, or larch and fir in District 1, would show a similar effect.

THAT FAMOUS BOWLING GAME

The event of the season, in truth of many seasons both past and future, among the Washington aristocracy occurred last Friday evening at the King Pin alleys. All the star bowlers of the Nation's capital participated except "Old Rip" himself, Col. Greeley, Mr. Sherman and "P.R" Smith, foremost members of the Reserve Corps. They were understood to have been in Chicago staging a little practice set with Charley Bluin, preparatory to the big match set for this week.

It was worth the price of admission many times over if only to see the dignified but agile chief of Grazing, the Hon. Will C. Barnes, cavort all over the field. He was particularly expert in playing the corner pockets, the only trouble being that said pockets were not located half way down the alley. It was a treat to see him heave one off, however, because it invariably produced that famous Santa Claus smile and on rare occasions a little "pointed remark." But the real treat was his "special delivery." He used all of his hands and all of his feet and all of the alleys in starting the ball on its journey, but he surely got a wicked curve on it, a regular rainbow curve.

THAT FAMOUS BOWLING GAME (Cont.)

Senors Carter and Headley were determined that their colleague from the sixth floor should not run off with all the honors, so they put their heads together and staged a few little specialties of their own, consisting mainly of throwing the balls behind them. These little gratuities were like Babe Ruth's home runs in that they were not announced in advance. But, on the other hand, they were cleverly sprung as surprises on each and every occasion affording the gallery considerable excitement as well as some real good exercise. Senor Headley's delivery was grace divine, in fact more than that, but it pains me to say in this connection that it was hinted that perhaps he took a little unfair advantage of the others, as his light fantastic hop-skip and jump approach suggested that possibly he had concealed his youngster's Pogo stick about his person.

In fairness, however, it should be recorded that Clapp played second fiddle to none of his competitors when it came to purring over graceful, rhythmic movements in the performance of his bit. He had a wind-up identical to a Roman discus thrower, or perhaps I should say to two discus throwers. Every now and then, however, the ball slipped, which explains how these comments happened to be written this week instead of next.

Norcross came to the game laboring under the disillusionment that bowling alleys were built along the lines of Washington city street alleys, but he soon learned otherwise, much to his chagrin. Not only had the bowling alley people overlooked installing the usual center drainage system, but to the contrary, Norcross alleges that when his turn came to perform the alley immediately took on a crown in the center as high as any class A road project he ever inspected. Some took exception to Teddy's alibi, contending that he merely suffered a little attack of stage fright, alley work being entirely out of his line.

Dr. Kneipp performed after his usual highly approved fashion, scooping up the grounders and nailing his man on each occasion with deathlike precision, but could we properly expect less from the chief Recreation boss? He is unquestionably the leading exponent of the greatly developed art of bowling in these parts, which is as it should be. That is admitted by Kneipp himself, but,to slip you a little inside stuff,it has proven the source of intense jealousy in all quarters, and we are now striving desperately every day in every way to avoid further bloodshed.

Districts 1 and 6 sent on their emissaries to make absolutely certain that nothing was slipped over on them. It was unquestionably a very wise move, for no doubt they learned a great deal. They were observed making notes continuously of the especially strong points possessed by our men, which information it is understood they immediately phoned to their districts over special wires chartered for the purpose.

* * * * * * *

Sick leave slips and liniment have been much in evidence around the office since the match occurred.--Ed.

WE NEED MORE ACTION LIKE THIS

Supervisor Winn of District 3 sends us this: "During the Rangers' meeting held in the office this week, we were very much surprised to find that due to a great overturn in personnel during the past year and a half, not one of the field force was a member of the Government Employees' Relief Association. The matter was therefore called to their attention, with a result that five out of the seven made their applications, which are enclosed herewith. It is my understanding that one may put in a claim for the $1.00 initiation fee on each application, but this is not desired, and in case it has to be refunded to anyone, it should be to the applicant himself. This has not been requested, nor is it expected by any. A personal check of each applicant is enclosed herewith. I wish to state further that we have three members of the Gila force still to work on. If you see fit, you may send a blank application and financial statement and such literature as you may have in stock to the following: Wm. Cox, Silver City, N. Mex.; G. H. Currie, Buckhorn, N. Mex.; Henry Woodrow, Cliff, N. Mex."

PURITAN PASTURES

By C. G. Smith

Boston Common was set apart in 1634 as a "place for a trayning field and the feeding of cattel."

The stockmen were on the job early, as this occurred four years after the founding of the town and two years prior to a resolution passed by the town overseers relating to building restrictions, streets, "and for the more comely and commodious ordering of them."

The next reference,- furnished by Mr. Rachford,- is found in Bailey's Cyclopedia of American Agriculture, Volume 4, Page 98, in respect to the settlement of the valley of the Connecticut River in 1636, and that for 75 years cattle were kept in a common herd, cared for by herdsmen and paid for jointly in proportion to the amount of stock cared for.

The Acting Forester pro tem had a touch of the grippe and made us cut out large chunks of Bulletin dope. We had to hunt new stuff, which ain't so easy to do these days. This teaches us that we must always be patient with our Superiors.--Lightnin' Liz (SNT)

FIELD, OFFICE AND HEADQUARTERS TIME

By Roy Headley, Washington

The following figures result from an analysis of Ranger diaries made during the fall of 1922. The number of diaries varies from three in District 5 to eight in District 1:

District	Average total days on administration and fire in field	Average total days on effective field work including improvement
4	132	172
2	112	140
1	101	119
5	97	151
6	55	154

District	Average total days on headquarters, headquarters improvement and office	Average total days on office only
4	117	52
5	138	94
2	142	79
6	143	83
1	184	122

WASHINGTON NOTES

Beating the RR's: A rate of 30 cents per hundred or $.942 per mile was recently quoted on telephone wire by a number of shipping concerns for coast to coast transportation through the Panama Canal. It is probable that the telephone wire for Districts 5 and 6, and possibly that for District 1, for 1924 fiscal year requirements, will be shipped by water from some eastern point.--E.W.K.

"the Forestry Service

A Musical Aspirant: /Dear Sirr i am writting to You at Your address in the sunday school Paper stating that You wanted a good Cook and a Vioelien Player and a Guitar Player i believe i can do Your Job alwright so i thought i would write to You about Your work so i will close my letter hoping to hear from You Soon from"

Climbing Chipmunks: Having disposed of the Mountain Lion subject, let's tackle the humble but lively Chipmunk. There has always been discussion as to whether this little animal climbs trees.

Climbing Chipmunks (Cont.)

In his annual grazing report the Supervisor of the Montezuma National Forest says they do. He saw them climb trees in four separate instances.--W.C.B.

The Forester's Report: "Thank you very much for your thoughtfulness in sending me this report. I was greatly interested in the sections dealing with Alaska, and I believe that the declarations made therein were very acceptable to most Alaskans. I know they were to me."--B. D. Stewart, Super. Mining Eng., Dept. of Interior, Bureau of Mines.

FOREST PRODUCTS LABORATORY

Keeping the Turpentine Industry in the United States: A deal to use for five years 2,000 trees of second growth longleaf and slash pine for naval stores experimentation, just closed by the Southern Forest Experiment Station, is an important step in our experiments to improve turpentining methods in order that we may continue the productions of such supplies as turpentine and rosin. If we don't get results it is certain that within a few years we will cease to produce 70 per cent of the world supply, as we do now, and we will have to depend on other countries for these products. From work done by Austin Cary, Miss Gerry, and others, we know that young pines can be used successfully, but just how they can be worked to best advantage must be learned through further experiments. That the French, who turned a barren into a forest, are alive to these opportunities is indicated by a recent letter from a prominent French engineer:

"As you know, the southwest part of France is as to forestry the most interesting of our country which is not rich with forest. In this region, we have more than 1 million hectares (2,471,000 acres) covered with pines containing large quantities of resin.

"These pine plantations have the advantage to be in very flat country and to be generally cut down methodically.

"Actually big capitals are joined in order to set up a large mill to farm Landes pine, but a question rises. Shall we handle this wood to obtain only paper pulp and use in this case soda sulphate process with recovery of soda, rosin, turpentine from liquors? Shall we, on the contrary, try to obtain from wood by distillation or other process, all products it contains, and esteem pulp as subproduct of this industry?

"I think that in your laboratories they studied all these cases, and I should feel very much obliged if you send me all documentation you may obtain on the subject."

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Forestry Association: At the annual meeting of the Colorado Forestry Association held in Denver in January, a number of very significant resolutions were passed which point the way to a year of real accomplishment. A committee was appointed to take up with the American Forestry Association the possibility of closer cooperation, and, if possible, actual affiliation of the two organizations. Closer sympathy with the welfare of the State Fish & Game Association was evidenced and resolutions were passed indorsing both the general work of the State Game Association as well as the present game refuge program in which the Game Association is interested. Among other resolutions passed were those favoring bills at present before the Colorado legislature with regard to the duty of sheriffs in fire fighting and the responsibility of the State in defraying expenses thus incurred, and with regard to the defacement or removal of fire signs posted either by the State or Federal Forest Service.

One of the most significant resolutions passed during the whole evening was one favoring the removal of the State Forester's office from Ft. Collins to Denver, where this office could function more as a State Forester's office and less as an office of instruction, as it does at the present time, in connection with the Colorado Agricultural College. Such a change as this

DISTRICT 2 (Cont.)

Forestry Association (Cont.)

would be a decided step forward for forestry in Colorado and make possible a much closer and more effective cooperation between the State department and the Federal Forest Service.

D-2 Welcomes Smith Riley: Forest Supervisors of D-2 have had the pleasure of renewing acquaintance with Smith Riley, who has been in attendance at all the sessions, representing the Biological Survey and the particular interests of wild life.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Bids: Do bids pay? We say they do. A voucher accompanied by five bids has been received from the Sitgreaves National Forest to cover the construction of a drift fence. The lowest bid of $92.00 a mile was accepted. The other four bids were, per mile, $95.00, $100.00, $120.00 and $200.00. It is hoped that the lowest bidder does not weaken.

Why They Like It: Lumberman (who has visited Madison Laboratory):
Experiments show that hydrolyzed sawdust makes a really nutritious cattle food. Cattle eat it like corn or bran.
Forest Examiner: But what makes it palatable?
Assistant Silviculturist: Why, the grain of the wood, of course.

Wood and Post Sale: A five hundred and thirty acre tract estimated to cut 4,200 cords of juniper cordwood and 8,400 fence posts on the Tusayan Forest is being advertised. Minimum rates are 50¢ per cord and 5¢ per post. This timber is located on the Verde-Ash Forke Working Circle, where a considerable recovery in the woodland cordwood and juniper post business is being made after the serious slump of two or three years ago.

Still Think of Us: Ex-Forest Service employees retain their interest in the Service, as has just been illustrated by receipt in this office of a new map of Liberia, based upon surveys by Mr. Lee C. Daves, who was formerly a surveyor in District 3. Mr. Daves is now Chief Engineer of the Liberia Boundary Survey. The triangulation and plane table work in connection with this survey was made by him and the drafting was done during the past summer in Washington, D. C., by Mr. W. H. Gill, who was the Chief of Drafting in this office a few years ago.

Former Officer's Picture Used: A picture showing former Supervisor Hoyt of the Sitgreaves and present Clerk McClosky locating a fire on the Sitgreaves fire map is used to illustrate a very readable article by Will C. Barnes entitled "The Girl Behind the Fire Line" in the January issue of American Forestry.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Horse Round-up: Ranger Stock is to be congratulated on the success of his horse round-up. He has made a clean-up of all the horses on his District on the Marion and Dry Creek Association ranges. A total of 212 head of horses were gathered, all of which except 5 were turned over to their rightful owners and were mostly G-5 and permitted stuff which had not left the Forest at the close of the grazing season. The 5 head will be sold under the State law. Ranger Stock was fortunate in getting cooperative assistance. He had a total of 64 riders in the round-up. On the Marion Division alone there were 100 head less horses this year than were gathered last year and none against which trespass proceedings will be instituted. These round-ups are getting to be popular at Oakley, and are certainly in the interests of the Government. The only cost in connection with this round-up, which covered something like 120,000 acres, is the expenses and salary of the Ranger. It is expected that the 5 horses which will be sold under the State law will cover all costs in connection with their disposal. Excellent progress has been made and next year Ranger Stock expects to have another such round-up, for it is a help to the community and a help in the elimination of trespass after the close of the grazing season.--Minidoka.

Municipal Park in Logan Canyon: The plans for the Logan Canyon park are progressing favorably, and Ranger L. C. Smith is to be commended for the work he has accomplished. At a recent meeting held at the Chamber of Commerce, a number of representative business men were present. Mayor Crockett acted as chairman and a careful examination was made of the plans prepared by Mr. Emil Hansen, the landscape architect from the Utah Agricultural College. The present plans call for a park of about 10 acres which will be on the south side of the road opposite the State Fish Hatchery, and a part of the plans will include a lake to be used in connection with the fish hatchery, tennis court, band stand, and a considerable area to be used for lawn and grouping of desirable shade trees and shrubs. It is expected that a 5-inch pipe line will be laid from the mouth of Beirdneau Canyon, a distance of 3,500 feet, which will furnish ample water for all purposes.--Cache.

DISTRICT 5 - CALIFORNIA DISTRICT

"Far From the Madding Crowd": One of the most interesting and instructive motion pictures that has ever been seen around San Francisco was Mr. Donald R. Dickey's "Game Trails of the North Woods," recently presented at the University of California. This was an animated record of wilderness lives, and represented the results of ten years' work on the part of the author. The scene was laid in New Brunswick, on the headwaters of the Nipisiguit and Tobique rivers - "a cosy corner of the unspoiled out-of-doors; a last accessible land of game, without fences or reserves; a land of sparkling little rivers; a place to invite one's soul." The scenes taken in this last outpost of wild life depict deer, moose, caribou, partridge and snowshoe rabbits in their native haunts, photographed from land and canoe, by sunlight and flare, and made doubly realistic by the use of the ultra-speed camera, which showed in every detail the wonder and grace of movement of the wild creatures of the woods. Perhaps the one outstanding feature of the reels was the giant bull moose, seven feet high at the withers and with a spread of horns well over 60 inches, which led Mr. Dickey a merry chase for more than three summers before he was finally able to photograph this king of the northland in the open. To see such pictures is to realize more fully what a tremendous asset is the wild life of our National Forests.

Cooperation that Counts: The city of Pasadena has authorized us to expend not to exceed $2,500 in the construction of a lookout house and 19 miles of telephone line in the Arroyo Seco Canyon. The Los Angeles County Board of Flood Control will contribute about $600 for the purchase of material, and when the projects are completed they are to become the property of the Service. The city people want the lines for fire protection and the flood control people that they may ascertain how hard it is storming in the back country so that they may open or shut their flood control reservoirs.--R.H.C.

Dollars that Brought Results: Two or three years ago the Automobile Club of Southern California gave us money to develop a public camp in Bouquet Canon on the Santa Barbara Forest. That this money was well spent is indicated by the figures for last season furnished by Forest Guard Biddison. Between April 16 and October 29 there were 2,702 automobiles containing 10,800 people that stopped at this camp on Sundays and the Fourth of July only. No count was made on week days. Guard Biddison issued 602 camp fire permits to people using this camp.

The Number of People who passed through the Ferry Building, San Francisco (in which the Forest Service is located) for the past year was 48,617,601, according to figures compiled by J. K. Bulger, supervising inspector of steam vessels.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Publicity for "Products": A leading feature article in the magazine section of the Tacoma Sunday Ledger recently was devoted to the work of Albert Hermann of the Madison Laboratory and C. W. Gould of the Portland office of Products, who have been conducting a series of experiments in the kiln-drying of Douglas

Publicity for "Products" (Cont.)

fir common at the Tacoma plant of the Wheeler-Osgood Company. The article was illustrated by a number of photographs taken by the Ledger staff photographer, the photographic layout, together with the accompanying text, making a full half-page "spread" in the newspaper.--G.E.G.

Primary Control Record for District 6: W. B. Brewer, of Maps and Surveys, is now occupied in preparing a comprehensive record of all triangulation data within the District. This record will be held in over a hundred books, which will contain cards fully describing every triangulation station in the District. When this record is completed, it will be an easy matter to provide, at a very short notice, answers to any questions raised with reference to the primary control of the District. The record will also be of great value as a quick and easy reference in the preparation and compilation of new maps. The record is being copied from the originals, which were prepared by the Forester's office.

New Project: The Portland Railway, Light and Power Company is actively engaged in the development of the Clackamas power project on the Oregon Forest. Twenty miles of broken stone road have been built between Cazadero and Three Links Creek. Total expenditures of the company to date are nearly $700,000. Clearing for the transmission line will begin at once. The transmission line is built first in order to obtain power from existing plants for use in constructing the new plant; the building of a temporary plant for construction purposes is thus avoided.

DISTRICT 7 - EASTERN DISTRICT

A 50% Timber Estimate: Last fall a one hundred per cent cruise was desired on an experimental plot of 5.6 acres in Louisiana. Every tree over 12" dbh was tallied and volume tables used to get at the stumpage on the ground by species. Strips one chain wide were run back and forth. All odd-numbered strips were kept separate from all even-numbered strips, thus obtaining two 50% estimates; strips 1, 3, 5, 7, and 9 comprising one set and the even-numbered strips the other.

On the whole plot the tally was:

Loblolly - - -	113	trees - - -	52,160	bd. ft.
Shortleaf - -	40	" - - -	14,635	" "
White oak - -	57	" - - -	16,200	" "
Miscellaneous-	44	" - - -	7,860	" "
All species	254	" - - -	90,855	" "

The error which would have occurred had either 50% estimate been doubled to secure the actual cut on the whole area would have been 4.5%. Using the odd-numbered strips as a basis, we find that loblolly overran the average by 4%, shortleaf by 13%, miscellaneous by 6%, and white oak underran by 4%.--L.W.

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U. S. FOREST SERVICE
(Contents Confidential)

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FORESTRY AND OUR LAND PROBLEM (Cont.)

By Henry C. Wallace, Secretary of Agriculture

It would doubtless be best for the country if some law could be passed under which forthwith everyone would proceed to grow trees. But we know that great economic changes of this kind affecting the habits of people in the use of their land necessarily move slowly. It can not be accomplished in a year or by any single piece of legislation.

As such things go in the attitude of nations toward their natural resources, we have already moved pretty rapidly. It was only about 30 years ago that the first National Forests were created. It was only 25 years ago that the first ideas on the protection and management of public forests was written on our statute books. It was only 11 years ago that we started to buy forest lands for the protection of navigable streams. Within the last dozen years 15 States have enacted laws dealing with the protection and regrowth of their forests and the area of private forest land receiving some sort of protection has increased from 61 million to 166 million acres. The country is taking its forest problem seriously and ground has been gained pretty rapidly. Nevertheless, beyond any question, the time has come for another step forward. We still have a long way to go in evening things up with our forests. As long as we are cutting them down at the rate of 50 cubic feet per acre every year, while something less than 15 cubic feet is being grown, as long as our private forest land, one-fourth of the soil of the country, is largely threatened with idleness, we are headed for disaster.

The final answer to all these questions doubtless will require rather far-reaching legislation under which the care given to forest lands and the regrowing of timber upon them will be under a measure of public control. I doubt, however, if this answer can be written until the people have been more thoroughly educated on these questions and have thought them out to a more mature and more generally accepted conclusion. Meanwhile, we should lose no time in going right ahead with the obvious things that should be done. We can write another chapter in the national forestry policy of the United States right now along the lines of what has been well tested and found good. This will not be the last chapter, but it will represent real progress.

The first thing which it seems to me the Federal Government should do is to consider its own opportunities. It is illogical, not to say absurd, for the nation to be buying forest lands in order that they may grow timber, and for the nation to be preaching reforestation to private landowners, while at the same time failing to protect and conserve the forest growth on large areas of land which it owns itself. The logical expansion of the National Forests to embrace all of the lands in Federal ownership most useful for timber growing or water conservation was blocked several years ago by opposing interests and statutory limitations. There

FORESTRY AND OUR LAND PROBLEM (Concluded)

are at least eight million acres of such lands in the continental United States, besides an enormous area in the interior of Alaska. There are large areas of timberland in Indian reservations which are now well managed, but will ultimately be liquidated as tribal properties are opened up for general disposition. There are considerable areas of forest-growing land in military and naval reservations, which should produce continuous and well-grown crops of timber, while at the same time serving the purposes of national defense for which they were established. A policy means an established principle which governs action. It ought to be an established principle in the United States that all lands which the nation itself owns or controls and which will render their greatest service in growing timber or conserving streamflow should, after this fact has been authoritatively ascertained, be incorporated in the National Forest system.

A second line of development which has already been well tested is the extension of the National Forests by purchase on the watersheds of navigable streams. It has been a great revelation to me, in my 18 months as a member of the National Forest Reservation Commission, to see what a valuable public property has been built up during the eleven years since the passage of the Weeks law, and to learn in how many ways these purchased lands are helping to work out the forest problem of the country. And it has also shocked me to find out that the denudation of forest lands is going on seven times as fast as public forest ownership is being extended. While the national government and the States and municipalities, all combined, have been acquiring about 10 million acres of public forests or forest parks, 69 million acres of timberland have been cut over and to a large extent denuded and fire swept.

Obviously, the national government can not acquire all of the forest land in the country nor any considerable part of it. Obviously, forestry practice must reach and grip the private timber owner. Nevertheless, the creation of more National Forests on key areas is a mighty sound and helpful thing. By key areas I mean limited tracts where Federal ownership will be of special value in protecting stream sources, growing timber, and giving the local people a practical demonstration of fire protection and good forest management. I would like to see National Forests in all of the forest regions of the East such as we have now in all of the forest regions of the West. Each of them would become an educational center of the highest value. Around each of them would grow up cooperative arrangements with landowners for forest protection, practical examples of growing and harvesting timber, the inculcation of the forestry idea. Practically every nation of Europe has built up its forest policy around a core of publicly owned forests; and the United States should profit by their experience. We ought to lay out a program of forest acquisition, adjusted to the resources of the Treasury, under which this work can go forward steadily without the yearly peril of interruption. And we ought to encourage States and municipalities to do the same thing.

WHAT TEN THOUSAND FIRES TELL

by Col. W. B. Greeley

Forest fires are hard to pin down to facts. But in "Forest Fires in California, 1911-1920: An Analytical Study," Show and Kotok have pinned down a decade of fires and made them tell some mighty interesting and valuable things. They have taken the records of over 10,000 fires, classified them, analyzed them, and drawn forth some lessons we must take to heart. The job justifies our belief in the permanent value of individual fire records and of their careful analysis. And the methods used in this study are applicable not only to California, but to all other regions.

This bulletin is being sent to every man in the Service and I want every man in the Service to read and study it. It diagnoses a lot of our fire troubles with precision. It shows every Supervisor, Ranger, and Fire Chief how to diagnose his fire troubles. It shows that fires of different origins have different characteristics and demand different kinds of treatment. It carefully classifies areas of hazard from different causes. It kills the "let-burn" theory and properly emphasizes damage as a major

WHAT TEN THOUSAND FIRES TELL (Cont.)

element of real cost. It clearly brings out that we must at all costs keep Class C fires to a low percentage of the total number. Here enters our old friend "elapsed time:" slowness in getting to fires, coupled with incorrect or indeterminate policy, is one of the chief causes of bad fires. The other chief cause is lack of elasticity of organization to meet a bad season.

I merely touch on a few high lights of this study. It is one of those bulletins that come from time to time that ought to be deeply pondered by the entire Service, and I want to ask supervising officers to make sure that this is done.

A WORTH WHILE EFFORT

by Theo. Shoemaker, D-1

Word arrives that the Idaho forestry bill failed of passage. However, much good is bound to come from the effort. The committee which framed it held six 2-day meetings, a total of more than 25 sessions. It is safe to say that there were nearly a hundred hours of discussion of forestry between foresters, lumbermen, stockmen, irrigationists, and State officials. The discussions were full, free and above board. Cards were laid face up on the table. Facts and conditions, and the evils to be corrected were dealt with, and costs and methods were considered. Foresters were continually being asked for facts and opinions as to what good forestry practices require. One hearing was had before the Governor and State Land Board. As a means of education and building up interest in forestry, it is doubtful whether anything is more effective than to get leading men of all factions together for earnest informal discussion.

Evidently the people of Idaho are not ready for forestry, which means they are not informed as to need for it. They must be educated, and there should be consolation in the belief that all the time and thought and energy that went into this effort are not really wasted, but will count in the long-time program of education that must form the foundation of forestry in the State.

ANNUAL GRAZING REPORTS VS. FISH AND GAME

by Ress Philips, Pike

In order to correct any erroneous impressions which may have been conveyed by Mr. Barnes' article "The Cart before the Horse" in the January 22 Bulletin, I want to explain the difference between the Fish and Game Report and the Annual Grazing Report as they are compiled on the Pike. The former report is cumulative and the edition mentioned by Mr. Barnes contains all data gathered from 1914 to 1922 inclusive. In justice to Mr. Barnes, I want to say that it consists of 84 instead of 54 pages, but some of these pages are not yet completed. There are 54 numbered and 30 lettered pages, the latter representing the inserts added since the first draft was written. It is often necessary to rewrite a few pages in order to bring the report up to date, and new pages for the cumulative tabulations must be added each year. However, this is not a big job when compared to the Annual Grazing Report.

For the Fish and Game report, I have 84 pages of tabulations and descriptive matter which show by years the game census, number of fish fry planted, location of plants and results of past work, a brief statement of policy to govern future plants, a short cumulative history of extension work by the Forest Service, summary of recommendations for changes in game laws, name and description of Game Refuges, a list of local sportsmen's organizations and clubs, a cumulative list of game law violations and action taken, and perhaps other cumulative data in addition to a rather lengthy discussion of the habitat of the principle game animals which is the result of the experiences and study of the entire force.

These data are assembled, tabulated and indexed for ready reference and comparative purposes, and I can get what I want from them in a few minutes. The complete and up to date report is kept in the current files and shows progress or the lack of it.

ANNUAL GRAZING REPORTS VS. FISH AND GAME (Cont.)

From 1914 to 1922, inclusive, eight annual grazing reports were submitted (parts 1 and 2 for each year except 1918) containing a total of 498 typewritten pages of descriptive matter and tabulations. These old reports are kept in the closed files and it would take days to review them all. Even then it is difficult to compare one year with another or to determine just where we are going.

I am not boosting the Pike Fish and Game report. It is not perfect by any means and the local force fully recognizes its shortcomings. However, isn't the cumulative idea a good one and couldn't it be applied to the annual Grazing reports with beneficial results?

COME ON IN

Sir:

On spite of the fact that I was born on the state of Iowa, I defy you to call me a barbarian. I have since lived long enough on the civilized State of Illinois, on the city of Chicago, and I have spent odd years on the University, where at least a small part of my time was spent on English classes. Hence I deny your right to criticize and fulminate against the use of the word "on" in connection with National Forests. I here affirm and shall continue to do so, until my mouth is stopped by death or something, that "on" the National Forests is as good usage as "on" the District of Columbia or "on" a swivel chair or "on" love or "ondigestion. Onveighing against "on" is as oneffectual as trying to get a F. S. man to write "data are," or "someone else's."

Being "on" a National Forest is like being on jail - you feel secure. Saying it the other way makes you feel like you were onexorably and onfernally ontoxicated.

Onfeelingly yours,

TO A PREPOSITION

Rudely turned up by F's Plough, February 31, 1923.

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If "in" is "on," then up is down,
And out is in, I ween;
And upside down is downside up
And across is in between.

Over is under, above is below
And through is round-about;
Off is on, and upward is down
And inside of course is out.

I might keep this up for half a ream
To make it perfectly clear -
If I seem to be "off" I'm really "on"
When it comes to "in," old dear.

WASHINGTON NOTES

Be Careful: "As a servant, organization is excellent; as a master, it marks the beginning of the end."

"Keep organization in its place and do not permit it to check progress, originality, or new ideas."--American Lumberman.

The Uttermost in Sheeplessness: The National Zoo here in Washington is planning to get a few specimens of sheep so the kids hereabouts will know what the critters look like. No doubt to many Rangers in the Rocky Mountains along about counting time the District of Columbia would seem an ideal Ranger district, and it is regretted that applications for a transfer can not be accepted.

Mr. George H. Lautz, Assistant Chief Engineer, has returned to Washington after an extended trip to all Districts. On this trip Mr. Lautz discussed all engineering work, particularly maps and surveys, with the District Foresters.

FOREST PRODUCTS LABORATORY

Assistant Secretary Pugsley Visits the Laboratory: Assistant Secretary of Agriculture Pugsley recently visited Madison and, in spite of insistent calls for his attention elsewhere, spent considerable time at the Laboratory.

Producing Colored Flames: Perhaps some National Forest user may want to attempt to improve on nature by producing different colored flames as he burns the pine cones in the fireplace of his special use cottage or in his summer camp. If this is the case he might be interested in the following list of organic salts which could be added to color the flames.

Salt	Color
Potassium chloride	Violet
Sodium chloride	Yellow
Strompium chloride	Red
Copper chloride	Yellowish green
Lithium chloride	Red

Other salts such as nitrates or sulphates may be used, although in general best results will be obtained with the chlorides.

Pine cones commonly burn with an illuminous and smoky flame on account of the resin which they contain and this might prevent the full effect of the colored flames produced by the materials added to them. For obtaining colored flames by the addition of various inorganic salts it is also necessary that the temperature be fairly high.

Building Requirements for Small Structures: In these days of high building costs and scarcity of material, the report of the Building Code Committee of the Department of Commerce on small house construction is a valuable addition to the builder's library. The first edition of 10,000 copies was exhausted in two weeks, and a second edition of 5,000 copies has been ordered.

John A. Newlin of the Timber Mechanics Section of the Forest Products Laboratory was the only Government official on the committee, and most of the material on wood construction is the result of Forest Service research.

DISTRICT 1 - NORTHERN DISTRICT

Airplane Patrol in Idaho: An experiment in airplane patrol will be carried on by the Potlatch Timber Protective Association during the coming season, according to an agreement recently made between the association and Mr. N. B. Mamer, a commercial flyer of Spokane, Washington.

Mr. Mamer agrees to furnish two new planes, specially designed for this particular kind of work, both equipped with radio telephone sending sets capable of sending messages at least 100 miles, and a receiving set for the landing field. He will furnish pilots, mechanicians, parts, replacements, gasoline, oil and grease all for $950 per month. He agrees to fly 2½ hours a day including Sundays and holidays and will put in overtime, when called upon to do so, up to five hours a day at the rate of $11.00 per hour.

According to the terms of the agreement, other associations and the Forest Service will be allowed to participate in the arrangements by furnishing an observer and by paying Mr. Mamer at the rate of $12.50 an hour.

The Forest Service does not plan to participate in the arrangement, but will watch the experiment with a great deal of interest.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Supervisors' Banquet: As a fitting culmination of the Supervisors' meeting in Denver, a banquet was held at the Shirley-Savoy Hotel on Friday evening, February 9, at which about 90 members of the Service and wives were present. Seven of our more histrionically inclined Supervisors put on an enjoyable entertainment purporting to be a reunion of ex-Supervisors in 1933, after the Forest Service had been taken over by the Department of the Interior and all the former Forest officers had resigned and (according to these reunioners) gone into new professions ranging from bootlegger to poet, not to mention a loan shark, an I.W.W. agitator, and an aesthetic dancing teacher. Another feature of the evening was the community singing, which, although feeble on the part of some, was at least sufficient to make the roof of the banquet hall tremble.

Photographic Contest has been held, 12 photographs being sent in from each Forest, and first, second and third prizes given under the various headings, Conditions, Activities, Scenery and Game. The contest this year showed that a greater number of individuals have taken an interest in photographs and have won prizes than in any previous year.

Peridermium Harknessii Eradication: In accordance with recommendations made by Dr. Hedgcock of the Bureau of Plant Industry, a crew of men has been engaged this winter in clearing out the Peridermium infection in the Halsey plantations on the Nebraska Forest. This consists of removing all branches which contain secondary lesions which are apt to develop into fruiting bodies next summer. Three vacant statutory ranger positions were temporarily given to the Nebraska Forest for use in this work and have been filled by ranger eligibles. It is expected that the infected area, which consists of 200 acres of yellow pine plantation from 5 to 15 years of age, will be thoroughly cleaned up prior to the opening of the planting season.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Colorado River Project: Mr. Herbert Hoover, Chairman of the Colorado River Commission, says in an article in the Southwestern Stockman Farmer for December 30, that the Colorado River Basin is the greatest single asset of our undeveloped national resources. The full use of the Colorado River will double the population of the Basin States from Wyoming to Arizona. There are 2½ million acres now under irrigation in this territory, states Mr. Hoover, and it is possible to develop a further four million acres, making it an agricultural area larger than the State of Maryland. In addition there's the possibility of developing four million horsepower of energy, which is twice the amount generated in the whole Sierras. He sees an agricultural expense capable of supporting three million people. D-3 will have to hustle to make the timber crops rotate fast enough to furnish lumber for the hay barns, corn cribs and residences as well as for the fruit boxes and vegetable crates that such a population will demand. That's our job, however, at least to the extent that nature has provided the land, and all these gigantic figures show there isn't a stick of timber or a blade of grass for wasting.

Rapid Growth on Cut-over Land: In order to determine the effect of cutting on diameter growth of trees in the Engelmann spruce type on the Carson National Forest, increment borings were taken from a number of trees on an area cut over ten years ago. The compilations show that the average amount of growth during this period was about 0.9 of an inch. It is interesting to note that this amount of growth is also about the same in all diameter classes, i. e., from four inches to fourteen inches D.B.H. inclusive.

Borings taken from trees of the same diameter in the virgin stand show only a growth of 0.5 of an inch in the same ten year period - or only about one-half as much as the trees on the cut-over area. It is expected that the accelerated growth of trees on the cut-over areas will be maintained for at least thirty years. In other words, the trees retained will have grown 1.8 inches in that time.

Borings taken from trees on cut-over areas in the Douglas Fir and Yellow Pine types show similar results in acceleration due to removal of part of the stand.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Sawtooth Progresses With Deferred System: Ranger Ed. Minear, of the Sawtooth Forest, reports that the Camas Unit Grazing Association has adopted a five-year rotation for handling its deferred areas. Their allotment has been divided into five units, one of which will be deferred each year. This association, comprising fifty permittees, is the largest on the Forest, and grazes some 2,500 head of cattle under one management. The total operating costs last season, including herding, salt, and grazing fees, were $1.96 per head. Losses were 1.52%. The association has an excellent 400-acre pasture for gathering beef. Numbered salt grounds are numerous on their range.

Age of Entering the Service: Operation has recently made a little table in order to show what the effect would have been if we had had an entrance age of 21 to 35 years, as is proposed in the new manual, instead of 21 to 40 years, as has been the case in the past. There are 47 rangers who entered the Service between the ages of 21 and 25, 60 from 26 to 30, 33 from 31 to 35, and 23 from 36 to 40. In this last 23 there are some of our best rangers who could never have been accepted under the proposed new regulation.

Allotment Conferences: The allotment conferences are over, and every Forest headquarters, except the Kaibab, was visited. At least two members of the District visited each Forest except two. Eighty-one District Rangers and seven other Rangers were in attendance. We have one hundred and sixty-two districts, which means exactly 50% of the District Rangers were in attendance. Needless to say, the Supervisors were out in full strength.

The meetings were more than allotment meetings, and in many cases became real live ranger meetings. Special attention was given to the rangers' job sheets and the way the men are taking hold of them is gratifying. Quite complete discussions of Forest work in all branches was had, as well as the work of the District men as seen by the men on the Forests. Information secured will be used in formulating job sheets for the District men.

Star Valley Residents Interested in Forestry: Forest Assistant Gibson is conducting a school for certain interested residents of Afton and vicinity. Literature pertaining to Forestry will be taken up and studied under Mr. Gibson's instruction.

Mr. Gibson has secured the cooperation of the newspaper of Afton in disseminating Forest Service work and has published one article which appears as an editorial in the paper.--Wyoming.

DISTRICT 5 - CALIFORNIA DISTRICT

Nature in the Discard: Cecil B. deMille, the movie king, has made pictures fourteen times in the redwoods, and yet he says that the redwoods of California are photographed adequately for the first time in Jeanie Macpherson's "Adam's Rib," which is now being filmed for Paramount. And all because he did not go to the giant forests, but built his own right in the studio!

This forest is said to be one of the real marvels of recent cinema construction. It is 112 by 252 feet, the largest set ever built inside a studio. It covers over 26,000 square feet. It has a 200-foot running stream with a fall of 18 feet, a pool, a fallen tree and a cave. There are 45 huge trees, twelve of which are over fifty feet in circumference. Twelve thousand ferns were needed and nearly six tons of Oregon moss. It is said to have taken 400 carpenters and plasterers 24 hours a day to make this forest. It cost thousands and thousands of dollars. And it will return thousands, believe the producers, for it permitted the placing of lights and properties in a manner to produce eye-pleasing results where Nature is sometimes kind to the vision but very, very hard on the more exacting camera lens.

DeMille himself is convinced that within ten years "going on location" will be almost a forgotten phrase.

DISTRICT 5 (Cont.)

Eldorado Echoes: Mrs. Anita Baldwin, one of the largest property owners at Lake Tahoe on the Eldorado, has made a contract to have a fire line built around her entire property, a distance of about nine miles. It will be made according to the following specifications: through heavy, mature timber, 25 feet in width, with everything cut out under four inches in diameter and the ground raked to mineral soil; all trees left trimmed to a height of 8 feet and all refuse piled and burned. Through the brush areas the line is to be 50 feet wide, with the same specifications. The work is to be done under the supervision of the Forest officers, and no money is to be paid the contractor until the work is accepted by them.

When Duty Calls: Ranger J. J. Libeu of the Santa Barbara averaged more than 14 hours a day for 25 days on Fire Suppression during August last. His diary for the last two days of the month carries the significant entry, "Sick." And still there are people who like to go into ecstasies over the fascinating life of a Forest Ranger!

DISTRICT 6 - NORTH PACIFIC DISTRICT

One Way to Find Your Way out of the Woods: A traveling man stopping over in Albany gave one of the local force an Indian's idea of proper procedure when lost in the woods.

Said the Indian: "Mebbe so you get lost in the woods - You walk around and around; then you sit down and rest; pretty soon you walk some more, then get heap tired; rest again and make little fire and wait long, long time; nobody come; then make dam big fire and pretty quick Forest Ranger come and get you."--C.C.H.

Many Species Cut: The office of Forest Management has just figured up that the 211 million feet cut from the National Forests of this district last year came from twenty-four different species. Douglas fir, of course, leads the list in the amount cut, comprising 42% of the total cut. Western yellow pine is second with 30%, while western red cedar, western hemlock, Sitka spruce, western larch, Port Orford cedar, and lodgepole pine come in the order named with much smaller amounts. The hardwoods,- oak, alder, maple, madrone, cottonwood, and cascara,- are among those present, but none with large amounts.--T.T.M.

Land Exchanges: The following number of land exchange applications have been received to date:

Crater	3	Oregon	25	Umatilla	4
Deschutes	8	Rainier	2	Umpqua	1
Fremont	1 (Selection area)	Santiam	2	Wallowa	2
Malheur	3	Siskiyou	1	Wenatchee	3
Ochoco	16	Siuslaw	5	Whitman	6
Olympic	2	Snoqualmie	1		

There are, therefore, 85 cases to date, including special Forest acts and under the general exchange law, although a few of these are inter-forest and counted twice. Fourteen cases have been rejected by the District Forester.

Fourteen cases have been approved and gone to patent, under special Forest acts, involving 53,529.86 acres of base and 40,159.49 acres of selection. The net National Forest area has been increased 13,370.37 acres by cases which have either gone to patent or are in the hands of the General Land Office for final action.

Of course a large number of inquiries and especially personal calls have been received in the District office on the part of owners desiring to get the Forest Service attitude on the exchange work. There are apparently a great many small timber holders who desire to select quickly salable timber and convert it into cash.--C.J.B.

Service Bulletin

U. S. FOREST SERVICE

(Contents Confidential)

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FORESTRY AND OUR LAND PROBLEM

By Henry C. Wallace, Secretary of Agriculture

Among the foolish and thoughtless wastes to which the American people are prone, I doubt if there is any more senseless than burning up year after year millions of acres of young forest growth, to say nothing of the merchantable timber and homes and lives frequently destroyed. To permit this to continue, with the scarcity of timber now so plainly written on the wall and with the known inability of most of this land to grow any other crop except timber, would be inconceivable national apathy. We have already made a good start. Twenty-six States are now cooperating with the Federal Government in plan-wise forest protection, which covers in a way about half of the privately owned woodlands of the country. We ought to build on this foundation with a Federal law which states the policy more clearly than has yet been done and gives the Department of Agriculture a mandate to ask every State which contains forest lands to join forces with it. Once forest fires are brought down to a point where timberland insurance becomes feasible, we shall have gone far in actually restocking our cut-over lands and in encouraging reforestation as a commercial undertaking.

There are, of course, other things that ought to be done without more waste of time. The national Government ought to expand its facilities for research in timber growing and timber use. The time is ripe for interesting American business in growing wood. The necessity is here for interesting America business in the most economical and efficient use of wood. These practical needs of the situation ought to be met to a fuller degree than the public agencies are now able to do. The nation would do well to make a special point of encouraging the planting of forest trees. We are now planting about 35 million every year - States, landowners, and National Forests, all combined. But this represents less than 40,000 acres, and with our enormous accumulation of burned and idle land, that is indeed a small drop in a big bucket. I would like to see the Federal Government offer financial cooperation to any State in growing and distributing forest-planting material at cost.

There is an urgent call that we make ourselves a forest-growing nation. Our day of timber mining is over. Our idle lands are calling for something to grow. Our markets are calling for a larger supply of forest products. We can not do everything at once. Here are some specific things that we can do, that have been well tested by experience, that will represent more ground gained. Perhaps they are still too incomplete to be dignified by such a term as National Forestry policy. At all events, they constitute to my thinking a workable and attainable program.

Some people seem to have the notion that the National Forests should be administered simply on the theory of disposing of the timber after the manner in which private forests have been administered. The Department looks upon the matter very differently. Ripe timber should be harvested as it is needed, but in such a way that other trees will grow to be harvested in the future. For years our Forests were treated as if they belonged to the present generation. Now we see that conservation of our Forests is one of the greatest of our national problems.

IS OUR SALES POLICY CONSISTENT?

by C. G. Bates, Fremont Exp. Station

During the recent Supervisors' meeting at Denver, there was considerable discussion of the "salesmanship" and "advertising" necessary to dispose of our National Forest timber. One speaker even went so far as to suggest that by proper advertising a demand for such timber could be "created" which would not otherwise exist, just as a demand for chewing gum has been created by national advertising, for which no real need exists.

Is not this going too far, and is not any salesmanship or advertising of National Forest timber which will increase, by a single board, the present consumption of timber a direct flying-in-the-face of the facts we are constantly preaching?

In a recent meeting of the Service Committee, Mr. Smith made a statement which is quite well known to all of us but evidently will bear constant repetition, namely, that while forestry propaganda, successful fire prevention and other natural factors have given us a good start on the production of young growth, there is bound to be a wide gap between the time when this growth will be a factor in lumber production and the time when existing stands of virgin timber are essentially exhausted. Is there any way in which this gap can be bridged except by reducing the present rate of cutting and consumption? Of course there is not. How can the Government reduce the present rate of consumption? Obviously, the best way would be to put all the forests of the country on a sustained-yield cutting budget, both as a whole and regionally. The day when this can be done is, I fear, far off, and action will not be possible soon enough to prevent a large degree of famine. A second possibility is by price fixing or price raising. The former is much to be preferred because it allows an equilibrium to establish itself, while any price fixing is certain to create inequalities. But suppose, for example, that the Forest Service should decide at one stroke to double its present stumpage prices. Private timber owners would at once realize the coming speculative value of their holdings and would do likewise. The immediate increase of several dollars per thousand in the price of manufactured lumber could not act as other than a deterrent on all lumber uses. Such an increase, however, would not materially affect National Forest sales, since the larger margin of profit would make merchantable much of our timber now considered inaccessible. This arbitrary act, however, we fear would meet with much objection.

Let us now consider the third possibility, saving our National Forest timber for that rainy day not far off. Granted that much of this timber is ripe for the ax, are we not justified in saving it until its value to the people of the United States has doubled or trebled? Who is going to have any appreciable amount of timber to sell twenty years hence, if not the Government? Look at the following hypothetical case which will represent, it is believed, a fair average of National Forest growth facts: assume a rotation of 160 years; assume, generously, that the stand left after cutting will double the average growth rate of the virgin forest, which is 1¼% per year;

	If Saved	If Cut Now
Present stand, BM per acre	30,000 ft.	30,000 ft.
Cut now, 60%	0	18,000 "
Value to-day, $3 per M	0	$54.00
Left as growing stock	30,000 ft.	12,000 ft.
Added growth in 20 years, 2½% increase per year	0	6,000 ft.
Available to cut in 20 years . .	18,000 ft.	6,000 ft.
Value, at $6 per M	$108	$36
Total value	$180	$90

The idea which should be emphasized is that we are constantly deluding ourselves as to the time when a second cut can be had, equal to the first. If we eat the cake now, we shall certainly have nothing but crumbs twenty years hence. Why make the silvicultural sacrifices we are constantly making in order to keep up our cut now? A glance at the figures above will show that to keep our virgin stands even approximately intact, to yield a full return 20 years hence, the present cut should not reduce the growing stock more than 33%. To impose this restriction, alone, would go far toward accomplishing all of our objectives.

AGE OF MONTEREY CYPRESS

by Geo. B. Sudworth, Washington

The Monterey Cypress (Cupressus macrocarpa), a relative of the Old World Cypress tree (C. sempervirens) of the Egyptians and Romans, is one of several other California conifers that grow naturally over very limited areas. The range of Monterey Cypress is confined to about two miles of California coast south of Monterey Bay, in a belt about 200 yards wide extending from Cypress Point to Point Lobos. There seems to be no evidence that it ever occupied a larger range, although various conjectures are extant that it once grew in a wider coastal belt, part of which is now submerged. It does not appear that it is in imminent danger of soon disappearing from its rocky and sandy habitat, for it is constantly reproducing itself from seed. Moreover, the tree is extensively cultivated in the Pacific Coast from Washington to Lower California, while it is a familiar ornamental in European gardens, in mild climates of South America and in Australia and New Zealand. Its ability to thrive away from the coast and at elevations up to 2,000 feet was tested nearly 20 years ago in the San Bernardino Mountains by T. P. Lukens of Pasadena.

The longevity of this cypress has been long a matter of conjecture, with but little opportunity of determining the age of large trees, which are from 50 to 70 feet in height and from 3 to sometimes 6 feet in diameter. Fortunately, last year the long-looked for opportunity came of learning something definite about the age of these trees through Mr. E. L. Guppy of Pacific Grove, Monterey Co., California. The severe coastal storm of 1917 uprooted a number of medium and large-sized trees in the Cypress Point grove. As the trunks were being sawed into sections Mr. Guppy counted the stump rings of three trees which, respectively showed ages of 200, 250, and 300 years, the oldest tree having a trunk diameter of nearly 6 feet. Strangely enough, however, two other trees of unusually straight thrifty growth showed respectively only 50 rings for a stump diameter of 2 feet, and 75 rings for a diameter of 3 feet. Evidently the Monterey Cypress grows very rapidly in easily permeable soil, the situations occupied by the latter trees, and much more slowly in rocky situations, the sites occupied by the older trees cited.

WASHINGTON NOTES

Reclassification: The long deferred reclassification of Government employees was finally enacted into law in the last hours of the session of Congress just closed. Much to the disappointment of the great body of employees whose compensation would be directly affected thereby, the salary schedules established by the Act will not become effective until July 1, 1924. The reclassification embodied in the Act applies only to civilian employees in the executive departments and independent establishments in the District of Columbia, but the personnel classification board, consisting of representatives of the Bureau of the Budget, the Civil Service Commission, and the Bureau of Efficiency, is required to make a survey of the field services and report to Congress at its next regular session schedules of positions, grades, and salaries for such services which shall follow the principles and rules of the compensation schedules now provided in so far as these are applicable to the field services. This report is to include a list prepared by the head of each Department, after consultation with the board and in accordance with a uniform procedure prescribed by it, allocating all field positions in his Department to their approximate grades in the schedules and fixing the proposed rate of compensation of each employee thereunder in accordance with the rules laid down in the Act.

Reclassification (Cont.)

The classification board organized immediately after the passage of the Act and is now engaged in working out the procedure necessary to secure the detailed information from the heads of the Departments upon which the Bureau of the Budget will base its estimates of the cost of reclassifying the field services to be submitted to Congress at its next session.

Special Wave Lengths for the Forest Service: Steps are under way for the assignment of a special wave length to the Forest Service for its use in sending radio messages. The control of such assignment falls to the Bureau of Standards under its special regulatory powers in connection with radio telephony.--P.D.K.

FOREST PRODUCTS LABORATORY

Lab. Takes Second Prize in Winter Carnival Parade: Second prize was taken by the Laboratory in the winter sports carnival parade February 8 at Madison. In this parade were many floats, and 2,000 people representing the various commercial and other interests. On the Laboratory float were two logs, both from Alaska, one very large and the other much smaller with a placard, "Through research the small log does the work of the larger one." Paul Bunyan, carrying a huge ax and mounted on a mettlesome steed, attracted much attention. One small boy was heard to say, "Did he write "Pilgrim's Progress?" The eighty men and women representing the Laboratory, in forestry green and white uniforms with the words, "Forest Products," across the front of the caps, were a big feature of the parade, the girls especially being responsible for the prize. After the parade, which took place at 4:30 in the afternoon, the Queen of the Carnival was crowned and the special program of skiing, skating, ice-boating, and other winter sports began.

New Mexico Visitor: Earl W. Loveridge, Supervisor of the Carson National Forest, spent two days at the Laboratory on his way home from Washington, D. C.

January 15 Edition of Technical Notes: Of special interest to most foresters and laymen in this latest issue of Technical Notes is No. 187, entitled "What is Meant by 'Hardwoods' and 'Softwoods.'" How many foresters can answer this question? Another popular question is answered by No. 189, "Differences Between Heartwood and Sapwood," which gives the distinctions between heartwood and sapwood. The results of one of the recent laboratory studies is given in note No. 188, entitled "Kiln Drying Douglas Fir Common Lumber." Other notes are as follows:

181. Moisture-Resistant Coatings for Wood.
182. Details of Nailing for Common Styles of Boxes.
183. Metal Straps on Boxes.
184. Utilization of Blue Stained Lumber.
185. Action of Water on Zinc Chloride in Wood.
186. Coatings that Prevent End Checks.

DISTRICT 1 - NORTHERN DISTRICT

Protection Costs: What is believed to be the highest price ever paid for protection of private timber is reported by some of the fire associations of northern Idaho this year. As much as 42 cents an acre was paid by 34 timber owners in the Coeur d'Alene Timber Protective Association.

In every respect except in the presence of logging operations and areas of slash, the fire hazard on adjoining National Forests is probably greater than on this private land. In most cases the method of handling fires is different from that employed by the Forest Service, and this difference makes a comparison of costs for a dry season like 1922 very interesting. The total expenditure per acre for protection for four associations is given opposite the amount per acre expended by the nearest National Forest.

Protection Costs (Cont.)

Assn.	Cost per Acre	Nat'l Forest	Cost per Acre
Pend Oreille	11½¢	Pend Oreille	5.6¢
Coeur d'Alene	42¢	Coeur d'Alene	8.1¢
Potlatch	26¢	St. Joe	11.6¢
Clearwater	8¢	Clearwater	9.1¢

The protection of 1,465,000 acres of private land cost $330,000, while for 2,680,000 acres of National Forest adjoining these areas the Forest Service spent for protection only $227,000.

The protection plans of the Clearwater Assn. are quite similar to those of the National Forests, which may or may not account for its favorable record.

In results obtained, the difference is also in favor of the National Forests, as is shown in the following comparison:

	Four Assns.	4 Nat'l Forests
1. Cost of protection per 1,000 acres protected	$231	$85
2. Area burned over per 1,000 A.	26 A.	5 A.
3. M.B.F. merchantable timber dest. per 1,000 A.	108 M	18 M
4. Damage done per 1,000 acres	$412	$51

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

The Annual Planting Report for D-2, which was submitted to the Forester on March 1, shows that a total of 4,115 acres was planted during 1922. This is the largest area ever planted in this District in a single year, although the area has been exceeded in the past when large areas of direct seeding were being done.

Among the outstanding features of the year's work, may be mentioned the large area planted on the Minnesota Forest - 1,760 acres at an average cost of $4.38 per acre. Supervisor Marshall is speeding up the job and hopes to complete the reforestation of all denuded areas within the next five years.

On the Nebraska Forest, 947.6 acres were planted at a cost of $21.22 per acre. The average cost of planting on the Bessey Division, $21.22, was $8.03 cheaper than 1921 and $17.36 cheaper than the peak prices of 1920. It is expected that the average cost will soon be reduced to $15.00 per acre because of more efficient methods and a greatly increased output.

The report shows that there were 11,297,000 trees on hand in the nurseries on December 1 and that 3,986,000 were distributed during the year.

The total area planted in this District to the end of 1922 was 27,400 acres. The direct seeding amounts to 25,133 acres, grand total of 52,533 acres. It was estimated recently that the area of successful plantations, including all areas half-stocked or better, amounts to 31,617 acres, or 60% of the area forested. The area of successful plantations is good when one considers the amount of seed that was scattered to the winds years ago without any experimental data to indicate that this method of reforestation was practicable. The early failures on the Nebraska and other Forests also helped to swell the total area of failures.

DISTRICT 3 - SOUTHWESTERN DISTRICT

First Arizona Sawmill: According to John A. Johnson, in the TIMBERMAN, the first sawmill of any importance in Arizona was erected in Flagstaff in 1881 by Edward Ayers. Two years later it was taken over by the Riordan Bros. This sawmill is one of the oldest established manufacturing plants of any kind in Arizona. The investment in Arizona mills, of which there are thirty-one, is estimated at ten million dollars and the value of the yearly output at slightly less than five million dollars. The Arizona lumber mills operate 175 miles of railroad, seven locomotives, and three hundred log cars.

Forestry Missionary: Assistant District Forester Kircher has probably talked forestry to the Brazilian Minister of Agriculture. He stated in a letter, written January 20, that such an arrangement was made for the next week. "Brazil is the big reservoir," says Kircher, "from which future supplies of lumber will come. Some day a lot of it will reach the United States and I'd like to venture the guess that development will be largely by American capital. When the time comes I hope that foresters will take a prominent part in the development and perpetuation of these wonderful resources. Most of the Brazilians realize that there is a great deal to be learned from the United States and they are anxious for information."

Wild Dogs: Last summer one of the boys on the Black Range Crest trail crew had his female Airedale in camp, which mated with a police dog. Her owner was called on to augment the protective force at Diamond Peak, and when work was over he returned home with the Airedale for only a short time before going to Hurley to seek work. The Airedale evidently thought he had returned to Diamond Peak and she went there to find him. While there, she gave birth to nine puppies, according to Hugh Hodge of the Diamond Bar ranch, although one died shortly after birth, as it was found in the den. The result was as usual. A mother with eight puppies to feed must have something to eat. She naturally did what she knew to be wrong - calf killing - and thus evaded man at every turn. Since her puppies have become larger, their range of territory is widening. Their tracks have been seen seven miles down on either side of the Black Range and, unless already captured, hunter Inman, of the Biological Survey, is having his hands full. At last reports, Mr. Hodge said it was nearly impossible to trap or to approach close enough to shoot these dogs.--Gila.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

"The Girl Behind the Firing Line": Yesterday afternoon a meeting of the whole office was held at which Miss Rosalie Holberg read a story by Mr. Will C. Barnes, "The Girl Behind the Firing Line," which appeared in the last "American Forestry." If you have this magazine around your office, be sure and read it; if you don't, you can read the mimeograph reprint which we are going to send out soon. This is a great story for clerks and stenographers and for forest rangers' wives, too. It shows how these people, who perhaps are often just about forgotten in the Forest Service organization and who are considered as just somebody to handle the routine without balling it all up, can really be essential parts of the Forest Service machine and take a real live interest in the broader work of the Service. It is a great story. We expect all the girls around here to come to work with bobbed hair and short skirts and use all kinds of snappy language, besides taking a better interest in the essentials of the work of the Forest Service after hearing this story read.

Timber Sale Business Picking Up: Forest Management expects a busy season ahead and lots of work in timber sale business. At the present time there is an informal application for 44 million feet on the Payette. On the Boise preparations are being made for a 30 million foot sale, while a large land exchange is pending with the Boise Payette Lumber Company. The Targhee Forest will have a 62 million foot sale, while on the Manti there is application for about 47 million feet. Inquiries are being received regarding the Grays River timber, as well as a flood of inquiries regarding the possibilities of the Provo River timber amounting to 104 million feet. The

Timber Sale Business Picking Up (Cont.):

promised development of steel business at Springville is stimulating these inquiries. The Park City mines have decided to become satisfied with native timber and are demanding large amounts from the Wasatch and Uinta Forests. The Standard Timber Company is asking us to get ready for an application for 50 to 100 million feet of timber in the upper Green River region for next year. These are the larger operations, but there is also a considerable increase in small timber sale business, and a number of sales which have been dormant for several years are coming to life again. Not so bad for a treeless district.

DISTRICT 5 - CALIFORNIA DISTRICT

F. S. Exhibit at Pacific Auto Show: The Forest Service fire exhibit was shown in cooperation with the California State Auto Association at the Pacific Automobile Show, San Francisco, in February. The setting consisted of a raging forest fire shown on a circular painted background, with burned stumps and logs and the figure of a ranger with shovel in hand in the foreground. The scene is lighted by flashing red lights, with flames produced by strips of colored silk agitated by electric fans, and smoke made by chemicals. The spectacular exhibit formed the piece de resistance in a large room which was converted by the Auto Association into an outdoor setting, with painted mountain scenery on the walls, real tree trunks and an overhead canopy of green branches. On one wall there was a mountain pass with miniature automobiles climbing the different grades; another wall showed fertile valley land with mountains in the background, while in a corner an auto-camp scene framed in trees added realism. The entire layout was conceived by Paul Fair of Public Relations, the painting done by Frank J. MacKenzie, and the greenery furnished by the officers of the Plumas National Forest, who went out into five feet of snow to secure the trees and branches which added so materially to the attractiveness of the exhibit. A tally of visitors, made daily, showed that over 45,000 people viewed this exhibit during the week of the Auto Show.

Arbor Day: California Tree Planting Week was celebrated March 4-10 and Arbor Day on March 7. The latter was first observed in this State on November 27, 1886, and has been held annually ever since, the date having been changed by the State legislature in 1915 to coincide with Luther Burbank's birthday. The history of this celebration is rather interesting, running as follows: 1,500 years ago, in a little Swiss village, the decision was reached to plant an oak grove on the common and a special day set aside for the work, in which everyone in the town took part. In the evening there was a festival for the grown folks and a wheaten bun was given each child. The State of Nebraska was the leader of Arbor Day observance in America through the efforts of former Secretary of Agriculture J. Sterling Morton, who in 1872 suggested to the Governor that a day be set aside for the systematic planting of trees.

DISTRICT 6 - NORTH PACIFIC DISTRICT

From the Seattle Lab. Mr. Zimmerman is working on a report covering strength tests of various species of telephone poles. The report will cover tests of fifteen groups of poles running fifteen and twenty to the group. Strength data covering the following will be shown: western red cedar from Idaho, Washington, Oregon, and Montana; northern white cedar from Minnesota; lodgepole pine from Colorado, Montana, and California; western hemlock and Douglas fir from Washington, and Engelmann spruce from Colorado. Comparative strength data will also be shown for tests made by the Forest Service standard method of testing telephone poles and the method formerly employed by the Pacific Telephone and Telegraph Company.

DISTRICT 6 (Cont.)

A Going Hound: A man who was employed as a Ranger upon the Colville several years ago was called on to run the lines of a homestead claim on unsurveyed land. When asked later how he did it, with utter frankness, replied: "I surveyed the claim by leaps and bounds." Also the following was reported by the same scholar when seed collecting was being carried on in this Forest, "I have now collected twelve sacks of pine combs."

Valuable Contacts: Supervisor Weigle of the Snoqualmie will take a prominent part in affairs of the Seattle Chamber of Commerce for 1923. He has been elected chairman of the Committee on Mountains and is also a member of two other committees - Tours, and Smoke Nuisance.

DISTRICT 7 - EASTERN DISTRICT

Returning the Favor: In 1907 the New York Zoological Gardens sent out to the Wichita Game Preserve 15 head of buffalo, representing four distinct strains. Under the favorable conditions existing on the Oklahoma preserve, the buffalo have thrived and the herd has been increased to 145 head, including 39 which have been given away to various outside agencies. On the other hand, in this period of 16 years the New York Zoo herd has steadily declined, one contributing factor being that the 15 head sent to the Wichita were probably the very best of the herd at that time. In addition, the Zoo has furnished excellent specimens to various other herds on different occasions. Some time ago the Zoo imported a number of buffalo from the Yellowstone Park herd, but these encountered difficulties in acclimatization and the importation was not successful. As a result, the Zoo is now requesting the Forest Service to supply it with breeding stock from our Wichita herd and two bulls and four cows will be furnished this spring.

National Forest Examiner C. B. Brereton, who has been in charge of Law Enforcement in this District for the past three years, is now in Hot Springs, Arkansas, having been detailed for some time to the Arkansas Forest on account of the incendiary situation there. Instructions from District Forester Reed state that he wants the fire situation in the South looked over and a report made to him in order that plans to introduce Law Enforcement in District 7 may be made prior to the fire season.

Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

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WHAT FOREST HAD THE LARGEST TIMBER BUSINESS IN THE LAST FIVE YEARS?

By E. E. Carter, Washington

If the business is measured by receipts, the Coeur d'Alene leads all the rest. If the yardstick is volume cut - Wrong! It is the Tongass. Standing seventh in total timber sale receipts for the five fiscal years 1918-1922, inclusive, it leads all Forests in volume cut for the period 1917-1921, with a reported cut of 196,000 M for the period. The 1922 figures are not yet available. And now comes a report from Juneau saying that "The outlook for timber sale business this season is better than ever before."

The Tongass has not waited for the development of its certain pulp and paper industry to do business. Sawtimber and piling are sold in quantity, for use chiefly in the fish industry. That industry has recovered from its depression, and this spring is demanding a lot of piling to rebuild its fish traps, and has loaded the local sawmills with orders for boxes. Early starts this season are the result and the cargo export of lumber to foreign markets may be dropped, after a good start, to meet local needs.

The small pulp mill on Port Snettisham has been running all winter. Advertisement of the equivalent of two billion board feet has begun, in the expectation of the establishment of a large paper mill on Thomas Bay. Other projects look more certain than for the past two years, as the rising price of pulpwood, pulp and paper in the East make consumers and producers squirm uneasily and consider Alaskan opportunities more seriously.

Even the shingle people are getting interested, and there is a plan for establishing a shingle mill at Ketchikan. This would solve the problem of a market for the small percentage of red cedar in the typical stand of sawtimber or pulpwood in the southern part of the Tongass.

The Big Twelve in timber sale receipts 1918-22 - Coeur d'Alene, $500,200; Whitman-Minam, $456,500; Kaniksu-Pend Oreille, $441,375; Coconino, $331,800; Plumas, $315,300; Crater, $298,400; Tongass, $297,300; Stanislaus, $256,375; Lassen, $253,950; Shasta, $238,900; Medicine Bow, $232,200; Arkansas, $204,960. The hyphenated Forests hold their places if the appendices are dropped.

CONSIDER THE CIRCUS MAN

By H. N. Wheeler, D-2

At a recent Commercial Club meeting in Denver, a circus-advertising man held forth on ways and means of filling the "big top." The only way to get a man to go to a circus is to make him want to - not admittedly, to all intents and purposes it's to give the youngsters an outing - nevertheless, the only way to get the prospective attendant to see past the long street car ride, the dusty walk to the lot, the jostling crowds, the hot, stuffy tent and hard seats, is to make him want to see the show. To do this, convincing arguments, reason, logic are less than nothing. But

CONSIDER THE CIRCUS MAN (Cont.)

in every adult there is a remnant of the 12-year old brain, susceptible to the touch of 12-year old methods. After seeing the bright colored posters every day for two weeks, we just can't resist.

Without creating a desire for forests, we can argue and reason through eternity, with no more effect than water on the proverbial duck's back. But create in the nostrils the perfume of the pines, in the mind's eye the joyful sight of forest-clad mountains, season it with a few trout, maybe a grouse, or even some big game, and we have an ally. It is not the 12-year old mind and emotions, but the stone age mentality and instincts which, in this case, command the faculties of reason. Many of us feel that this isn't forestry, neither is designing and tacking up posters much of a circus stunt, but it fills the seats. The bell merely swings in its tower till there is an ear to hear it - then it rings.

RESEARCH ENTERS NEW FIELDS

By Ward Shepard, Washington

Following an insistent public demand, Congress has appropriated $50,000 for two new forest experiment stations - one in the Northeast (New England and New York), the other in the Lake States. In New England, S. T. Dana, formerly of the Forest Service and now State Forester of Maine, took the lead in the fight for a Federal station. In the Lake States, several public service associations did the bulk of the work. Much credit is due the American Forestry Association for helping to bring about in these regions a wider popular understanding of what forest research is and why it plays a necessary part in restoring our forests. This understanding was the basis of the campaign that has now ended in success.

Steps are already being taken to draw up a sort of "eligible list" for the staffs of the two stations. We have also asked the opinions of a number of competent foresters, university authorities, etc., as to suitable locations for these stations. The plan will be to have, in each region, a central headquarters and several substations in the main forest types.

One of the outstanding needs in the Northeast is to coordinate the forest research under way there, to which will now be added Federal research. In both regions there is a fine chance for leadership, and both stations will offer unsurpassed opportunities for foresters who are interested in silvical research.

Two more stations have thus been added toward the Department's goal of 10 or 12 regional stations for the entire United States. Western foresters who are impatient of the slow financial advancement of the western stations should remember that these four new eastern stations are the result of public understanding of forest research and of the forest problem, combined, of course, with anxiety about the shortage of timber in the East.

A NEW POSSIBILITY IN FIRE SUPPRESSION

By H. T. Gisborne,
Priest River Experiment Station

An Associated Press dispatch recently announced the discovery of a method of causing the disappearance and precipitation of clouds by spraying electrified sand into them from an airplane. This has just been verified by an interview in the New York Times by Orville Wright, who witnessed one of the tests. In cooperation with the Army Air Service, two investigators, Dr. Bancroft of Cornell and L. F. Warren, have been conducting experiments at McCook flying field for a year and a half, chiefly with the object of removing clouds and fogs over aviation fields, cities and harbors. This new development should be of interest to foresters, because of the promise it holds of application in fire fighting during cloudy but rainless weather.

In the experiments an airplane was used, carrying about 80 pounds of sand, of about 150 mesh, with a wind-driven electric generator operating a device for charging the sand with high voltages. The sand was given a charge of .0006 electro static units per grain, and was scattered through the action of the plane propeller at a height of about 500 feet above the tops of the clouds, the plane traveling at a rate of about 100 miles per hour. The time taken to precipitate and destroy the clouds from the period of the first attack to the period of disappearance rarely exceeded 10 minutes.

Fire studies by the Forest Service have found that a high humidity acts very quickly in raising the moisture content of forest floor materials. Higher moisture contents in turn mean lower inflammability and greater ease of control of a going fire. It very often happens, however, that cloudy weather occurs during the time of fighting a large fire, yet the accompanying high humidity may not be alone sufficient to extinguish or even materially kill down the fire front. With the successful application of the new process of precipitating the moisture in clouds, it is conceivably possible for an airplane to fly over the fire front and cause a measurable precipitation of moisture from clouds which otherwise might fail to produce rain.

In the numerous tests at McCook field, the investigators have repeatedly dissipated clouds. These clouds varied in size from several thousand feet in length and breadth to several miles; in thickness from 500 to 1,500 feet; in altitude from 2,800 to 10,000 feet. Light, fleecy clouds of no great moisture content were dispelled without precipitation reaching the ground, the moisture being absorbed by the lower, dry air levels. These experiments may prove of great value to the Forest Service when the detailed methods have been perfected. So far as known, this method has not yet been tried out with a view of dissipating thunderheads and breaking up electrical storms.

AMERICAN FORESTRY'S PRIZE STORY CONTEST

By The Editor

For the best story on the subject "My Most Exciting Experience as a Forest Ranger," American Forestry offers the following prizes:

First prize - A No. 956 Hamilton Watch in 25-year gold case.

Second prize - A Winchester Model '94 Carbine, chambered for 32 special Winchester cartridge.

Third prize - A Comfort Sleeping Pocket, with air mattress and pillow inclosed within a waterproof, felt-lined cover. Weight, 12 pounds.

Fourth prize - Choice of a bait or fly model Bristol Casting Rod.

All forest rangers employed by the State and Federal services are eligible. Rangers should not hesitate to compete because they think they can not write. This is not a contest for "fine writing." Select what you consider your most exciting experience as a Forest Ranger and tell it - on paper - in your own way and in your own language. Manuscripts should not exceed 1,200 words.

Forest Rangers' wives are also to have the opportunity of competing in this contest. For the best manuscript on "The Forest Ranger's Wife" the following prizes are offered:

First prize - Fifty Dollars.

Second prize - Thirty-five Dollars.

Third prize - Twenty-five Dollars.

Fourth prize - Fifteen Dollars.

Woman's part in the saving of American forests is an unwritten story, of which the outside world knows little or nothing. Her problems, her hardships, her loneliness, the conditions under which she must often live and rear a family, the ways in which she helps her husband with his forest

AMERICAN FORESTRY'S PRIZE STORY CONTEST (Cont.)

work, what she enjoys most in the forest life are all vital human elements in America's forest movement. The contest is open to all women who are wives of forest rangers in the State and Federal forest services. Manuscripts should not exceed 2,500 words. Where photographs, illustrating any phases of the life of the ranger's wife or the conditions under which she lives, are available, they should accompany the manuscript.

The following instructions apply to both contests:

1. Stories must be based on actual experiences relating to work or life as a forest ranger or as a forest ranger's wife.
2. Manuscripts may be written in longhand or on the typewriter, but one side of the paper only should be used.
3. If possible, accompany manuscript with several photographs showing striking activities of forest life. These need not bear directly upon your story, but if they do, so much the better.
4. Write name and address plainly on the manuscript and mail it to AMERICAN FORESTRY, 914 Fourteenth Street, N. W., Washington, D. C., so that it will arrive before June 1, 1923. Mark "Ranger Story Contest" in lower left-hand corner of envelope.

Manuscripts which do not win prizes will be considered for later publication in AMERICAN FORESTRY, but unaccepted manuscripts will not be returned unless accompanied by return postage.

KAIBAB SQUIRRELS

By W. C. Barnes, Washington

In his annual game report, the Supervisor of the Colorado Forest reports the presence there of what is known as the Kaibab squirrels. This was rather a surprise to us, as we have always had the idea here in the Washington office that the "Kaibab" form of the beautiful white-tail squirrels found in northern Arizona on the Kaibab Forest belonged there, and there only.

There are two varieties of this white-tailed animal: The Abert - named after Lieut. Abert, who explored northern Arizona many years ago-- and the Kaibab.

Looking the matter up in different works on the subject, and more particularly Mr. E. W. Nelson's "Smaller Mammals of North America," published in the National Geographic Magazine for May, 1918, it is learned that while the Abert species is found in the yellow pine regions of the Rockies, from central Colorado south through New Mexico to and into Old Mexico, along the Sierra Madre Mountains, they are also found in the yellow pine regions of Arizona south of the Grand Canyon.

Mr. Nelson believes that originally the two species were one, but that the Kaibab form became cut off from the Arizona family by the Grand Canyon, where its isolation resulted in the development of marked peculiarities and substantial differences in coloring, etc.

It was doubtless the Abert squirrel that was noted by the Colorado Supervisor - a very natural mistake when the two are compared. If, however, it was the Kaibab, then the range of that variety will have been greatly extended.

The Abert squirrel exists in comparatively large numbers in the National Forests on the south side of the Grand Canyon in northern Arizona, while the Kaibab squirrel is found only on the north side in the Kaibab Forest. They are very much alike to the ordinary observer, but a study of the illustrations in Mr. Nelson's book shows that there are marked differences which should be remembered. The Abert squirrel has black ears and white belly, while the Kaibab squirrel has red ears and a black belly; the ears of each are tufted; and both have beautiful, long white tails, though my observation leads me to believe that there is more white on the tail of the Kaibab squirrel than on the Abert.

It would be interesting to have all of our Supervisors keep their eyes open during the coming summer to ascertain just where in the various Forests these squirrels may be found. They are not very numerous anywhere, and apparently do not seem to be increasing in numbers to any great extent.

THAT MEASURING STICK

By Arthur H. Abbott, D-1

Did you read the Fire Eater's article from Dist. 5, page 2, Feb. 26 number of the Service Bulletin?

Has the writer been using a correct measure to judge by? How much difference is there in the number of man-caused fires for the several 3 or 5-year periods since the Forest Service assumed charge of the Forests? And what is the corresponding difference in the number of Forest users, that is, campers, visitors and permittees of one sort or another? What is the attitude of the average Forest user compared with the attitude of the Forest user five, ten or fifteen years ago? As a matter of fact, is there not a very noticeable improvement in the care exercised by the General Public? That there is yet ample room for improvement is no question, but there is equally no question but that we are getting good results with our present methods of fire prevention propaganda. Are not our man-caused fires, considering the increased number of Forest users, proportionately far less than in the past?

For District One the following figures are pertinent:

	15-year average	1920	1921	1922	1920 1921 1922 3-year average
No. fires per year	779	435	917	568	640

The three-year average is but 82 per cent of the 15-year average in spite of the fact that many more people use the Forests than formerly. There is also the fact that fires are reported much more closely during the last three years than formerly. What is a correct "measuring stick?"

WASHINGTON NOTES

Theodore Shoemaker, who has been on a six weeks' detail in the Office of Public Relations, will return to District 1 next Saturday by way of the Madison Laboratory.

The Latest Forest Service Film "Red Enemy," which was made in cooperation with associations in District 6, has been sent to Portland. The Office of Motion Pictures of the Department hopes to secure a commercial distribution for this film.

WANTED!

From time to time request is made to the Washington office for copies of Dr. Sampson's "The Reseeding of Depleted Grazing Lands to Cultivated Forage Plants" (U. S. Dept. Agr. Bulletin 4). The stock of this bulletin is exhausted both in the Washington office and at the Superintendent of Public Document's office; unfortunately, the plates of this publication were inadvertently destroyed so that a reprint can not be obtained. Any members of the Forest Service who have copies of this bulletin that are not "working" will render a favor by shipping such into the Washington office.

FOREST PRODUCTS LABORATORY

King "Tut" Also Was a Wood User: When the ancient Egyptians of 3,500 years ago equipped King Tutankhamen for his long journey through the spirit world, they provided him with many articles made of wood. The time-resisting qualities of the material, properly protected, are indicated by the splendid condition of these furnishings of long ago. Many of the boxes are of wood, the four chariots are almost entirely of this material, as are also the fantastic effigies of sacred animals. Ebony has frequently been mentioned in

King "Tut" Also Was a Wood User (Concluded)

the cable reports from Luxor, and apparently various hardwoods are represented. The identification of these woods is awaited with interest.

Laminated Map Boards Withstand Service on Lookouts: Reports from the field indicate good service from the laminated map boards prepared by the Laboratory for use at lookout stations. One Supervisor writes: "These boards have been uniformly better than any heretofore in use on this Forest, and without exception have behaved very well under test of actual use. It is believed that these boards have not been in use long enough to determine whether there is any difference in the wearing qualities of them."

The boards will be reported upon again after this year's service.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Timber Sales in D-2: A sale of approximately 4,000 cords of aspen on the Rio Grande Forest has recently been made to the Nepsa Cooperage Company, Denver, stumpage rate being 35¢ per cord. This company has recently established a cooperage plant in Denver which is the first industry of this character established in the Rocky Mountain region. There are extensive areas of aspen in Colorado for which only a limited market exists and indications are that there is a possibility of a decided increase in the utilization for such products in the future.

The Depression in the Cattle Industry seems to be hitting all phases of the business and is not excepting the thoroughbred or registered business. One of the best thoroughbred herds in the State of Colorado and which has taken, perhaps, as many ribbons at the National Western Stock Show in recent years as any other, in the past few days has been sold over the block in its entirety, leaving the owners with a very extensive ranch property on their hands fully equipped for this particular kind of business and good for no other activity. There seems, however, to be a general feeling that the situation must get better and those who are able to hold on will eventually come out of it.

New Signs for D-2: A. L. Richey, Supervisor of the Holy Cross, has spent ten days in the District Office, following the Supervisors' Meeting here, preparing pattern copy and specifications for 1,000 signs required to sign this District.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Tonto Office Moves to Phoenix: The headquarters of the Tonto have been moved from Roosevelt to Phoenix, and hereafter all mail for that Forest should be addressed to Forest Supervisor, Ellis Bldg., Phoenix, Arizona.

Growth: Forest officers are often asked how long is required to produce a tree of a certain size. The following table was prepared from measurements taken on the Sitgreaves National Forest. The conditions of growth on this Forest are rather favorable:

Age Years	D.B.H. Inches	Age Years	D.B.H. Inches	Age Years	D.B.H. Inches
50	9.3	120	20.2	190	25.8
60	11.2	130	21.2	200	25.8
70	13.1	140	22.1	210	27.0
80	14.7	150	23.0	220	27.5
90	16.2	160	23.8	230	27.8
100	17.7	170	24.5	240	28.1
110	19.0	180	25.2	250	28.3

Road Signs: The Miami-Superior Highway is one of the few roads within the National Forests of the Southwest which has been kept free of advertising signs. This fact has been commented upon quite favorably by tourists and local people who have occasion to travel this road. The absence of signs is due very largely to notices which Supervisor Swift has had posted at conspicuous points along the road and at the forest boundary. These signs are in standard color and inform the public that posting of signs is prohibited. It was necessary in one instance to go so far as to secure an order from the Attorney General authorizing an occupancy trespass in order to secure the removal of advertising signs on rocks along this road. It was not, however, necessary to press the suit as the offenders removed the signs. It is believed that similar signs along main highways on the National Forests would result in very greatly reducing the advertising sign nuisance.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

The Union Pacific Railroad has become mush interested in the development of the scenic attractions of southern Utah since it has acquired the Salt Lake and Los Angeles route. A branch line is being built to Cedar City which is promised to be operating by July 1. The railroad plans to spend $35,000 in developing tourist accommodations at Cedar Breaks at once. They are also greatly interested in the Kaibab Forest, Bryce Canyon and Zion National Park, although conditions do not warrant the development of definite plans for improvements at these points at this time.

Soap and Screw Holes: If you have a meddlesome wood rat in your storeroom and his removal is desired, simply suspend a dried prune three inches above the peddle of a No. 0 trap and the rat is your victim. I had been combating wood rats all winter, trying to trap them or entice the pests to eat poisoned cheese or grain, but with no success. The cat and Airedale dog gave chase time and time again, but there was always something in the road to obstruct their hot pursuit. I removed everything in the storeroom to assist in the chase, but at that the three of us were too slow. I was conversing with a woodchopper when the subject of wood rats came up; he related his success and secret of trapping wood rats with dried prunes. I tried it and caught one every night until they were exterminated. If they harbor in your storeroom you try it. The only drawback is that the "bounty" is extremely low.--Ranger Wells (Humboldt).

DISTRICT 5 - CALIFORNIA DISTRICT

District Five Sets Another High Mark: District 5 has submitted a land exchange proposal which contemplates the conveyance to the Government of 2,838.36 acres of privately-owned land containing half a million feet of timber in exchange for 27.79 acres of cut-over National Forest land upon which there remains an estimated stand of 50,000 feet of timber. In other words, the Government acquires more than 100 acres of land for every acre which it grants and 10,000 feet of merchantable timber for every thousand feet it gives away.

Barrett, with his customary caution, appends a brief note praying that the Washington office will not take this case as a precedent for District Five land exchange values, but, nevertheless, the Washington office does entertain the fond hope that the District will eventually surpass even this shining record.--L.F.K.

Recreation Permits in D-5: A check of the Annual Statistical Report on special uses shows that on December 31 we had a total of 3,401 recreation permits in effect on this District, as compared with 2,822 permits at the close of 1921. This is a gain of 579 permits in the year, or about 15 per cent. There are now 3,073 summer home permits in effect, and 288 permits covering hotels, resorts, municipal camps and other recreational features. The leading Forests in the order named are the Angeles, Eldorado, Sierra, Stanislaus, Sequoia and Cleveland. These 3,401 recreation permits produce an annual revenue to Uncle Sam in rentals of over $50,000, and the estimated value of the improvements is in excess of $3,000,000.

Rangers War on Forest Outlaws: Forest Rangers last year killed 274 mountain lions, coyotes and bobcats on the National Forests of California. The destruction of these forest outlaws will save many deer and other game, as well as thousands of dollars worth of livestock, all of which are preyed upon by these varmints. The Santa Barbara National Forest in Southern California heads the list with a kill of 105 coyotes, 53 wild cats and 41 mountain lions. The destruction of predatory animals is one of the many cooperative activities of the Rangers in the interests of the users of the National Forests.

DISTRICT 6 - NORTH PACIFIC DISTRICT

The Grazing Business on the Wenatchee is 100 per cent to the good. All grazing permittees have paid their fees for the season of 1922. The total amount received for the Sheep and Goats permits is $6,427.88, total amount for Cattle and Horses is $559.18.

Matz Comes to Portland: National Forest Examiner Fred Matz has been transferred from the Crater to the District office to take charge of Timber Surveys. Matz brings with him long experience on several Forests as District Ranger, Deputy Supervisor in timber surveys, and Officer in Charge of the largest sale in the District.--T.T.M.

Good Story Spoiled: During the heavy December snows, Ranger Kirkpatrick sent in word that the town of Randle was snowbound, and requested permission to use Forest Service road tractor, trader, etc., in relieving the blockade. The necessary arrangements were made, and permission granted. Later we wrote Kirk for a story of the affair for the "Six Twenty-Six." He replied; "Recent warm rain took away the snow, so the equipment was not needed. Providence probably spoiled a mighty fine story."--G.E.G.

DISTRICT 7 - EASTERN DISTRICT

The James River Road Project which runs through the Natural Bridge National Forest for a distance of 6.7 miles and was constructed with Section 8 funds, was formally accepted by the Bureau of Roads engineers on February 10, with the understanding that the brush burning be completed on a one-half mile stretch of the road. In attempting to burn this brush on February 14, during abnormally dry and windy weather, the contractors allowed the fire to escape to the adjacent forested land, and before it was controlled had burned over 590 acres of National Forest land and 30 acres of privately-owned land. Due to the time of the year and the moisture in the leaf litter, the damage was comparatively small, amounting to only $125.90. The cost of suppression was $192.93. It is expected that settlement for the trespass will be made without question. Three men were on the ground when the fire broke out and nine more men arrived within ten minutes after the fire originated, but the wind was so high that the fire could not be controlled, although ordinarily at this time of the year a fire should have been controlled without difficulty by one man. This fire proved beyond any doubt that, under certain conditions, fires are absolutely unmanageable and had the fire occurred in April it would have burned over five or six times the acreage. In giving some idea as to the velocity of the wind in the James River gorge, it might be well to state that it blew spray from the river at least 30 feet into the air and the footboards from a Ford truck carrying fire fighters were blown from their moorings. After being replaced several times they were placed in the rear of the truck to reduce wind resistance. Innumerable trees were uprooted and the road was blocked in several places and had to be cleared to transport men and provisions.

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AN EFFECTIVE ALLY FOR FARM FOREST MANAGEMENT

By C. R. Tillotson, Washington

Some recent correspondence with the Federal Land Bank of Springfield, Massachusetts, indicates that one very strong agency is at work in the New England, New York, and New Jersey region which is likely to do more toward putting over the idea of forestry to the farm woodlot owner than all other agencies have been able to accomplish with the means at their hands. At the present time this bank has loans aggregating over $21,000,000 on 7,000 farms. On at least 50 per cent of these farms the value of the woodlot is sufficient to warrant taking into consideration when the loans are made. Most of the loans are for a period of 33 years, and, as our informant stated in his letter, "it is quite important for us to do whatever we can to keep the woodlots in as good condition as possible." If 50 per cent of these farms, as the Federal Land Bank states, have woodlots, the total area in forest growth must be considerable, perhaps as much as 200,000 acres. The bank has been in existence only since 1916, and is constantly increasing the amount of its business. The potential effect of its policy, which will be discussed a little later in respect to the management of farm woods, is bound to be enormous, not only in the particular woods which are affected by its loans, but in neighboring woods whose owners will gradually come to see the good effect of the management suggested by the bank.

After a loan is made upon a farm in which the timber value of the woodlot is taken into consideration, the owner must obtain permission of the bank to cut wood or timber other than a small amount for domestic use before he can do so. In giving permission, the bank usually requires a special payment to be applied in reduction of the loan, the amount and terms depending upon the kind and amount of forest products to be removed, the method of cutting, the use to be made of the proceeds if products are sold, the bank's margin of security, etc. This, in effect, is a brake upon cutting operations. In order to get a line upon these questions, the farmer is requested to furnish detailed information as to what product he is going to cut, when the cutting is to begin, size of the area to be cut over, age of trees to be cut, diameter and kinds of the trees to be cut and to be left, whether the woodlot has been pastured, whether there is any evidence of injury from various sources, and whether after the timber is removed he intends to let the tract grow up to timber again or devote it to other purposes. Accompanying this questionnaire is a 2-page mimeographed article entitled, "Care of the Woodlot," in which the principles of cutting and protection underlying sane management are very well expressed, and the idea also advanced that the value of timber on the farm is not generally fully recognized, and that, if properly handled, the woodlot may be so developed as to pay off the loan.

AN EFFECTIVE ALLY FOR FARM FOREST MANAGEMENT (Cont.)

In order to assist the farmer in a good working knowledge of the amount of wood and timber on his land, the bank has designed and made up two measuring sticks. One of these is for use in estimating the volume in board feet and cords of standing trees; the other is for use in scaling logs. The two are offered for sale at a price of $1. Apparently, these sticks are designed largely from information taken from U. S. Department of Agriculture Farmers' Bulletin 1210, "Measuring and Marketing Farm Timber."

It seems reasonable to hope that the lead taken by this Springfield bank will be followed by Federal land banks in other districts. It will certainly be a boon to farm forestry if such a thing should happen. The northeastern section of the country is, of course, the logical one for such a movement to start in. Its inception there, however, may be partly due to the fact that the President of that bank and the Executive Assistant who made up the scale sticks were both formerly employed in the Office of Farm Management of the Bureau of Plant Industry, and are somewhat familiar with what forestry means.

CHEAP FEED

By W. C. Barnes, Washington

On the Mono National Forest in California a number of young steers averaging about 18 months were turned loose on June 13, 1922, after being weighed, the bunch averaging 550 pounds. On September 13 they were again run through the scales preparatory to shipment, and the average was 700 pounds. The gain for exactly three months thus amounted to 150 pounds per animal, or 50 pounds per month.

Professor Henry, in his book, "Feeds and Feeding," gives a number of instances as to increase in the weight of cattle under pasturage conditions. The average in over a thousand cases involving the handling of yearlings for a period approximating six months showed a gain of 47 pounds per month at a cost of 1.6 cents per pound. For 2-year-olds the monthly gain was 52½ pounds at a cost of 1.9 cents per pound. These gains were on grass alone.

Based on a 3-months' season at 54 cents, or 18 cents per month, the National Forest ranges put 150 pounds of flesh on to the above cattle at a cost of approximately one-third of a cent per pound. If Professor Henry's figures are right - and they are accepted as so by all students of cattle feeding - then this showing for the National Forest ranges is an excellent one.

COTTONWOOD FOR PULP

By W. R. Mattoon, Washington

The paper industry is said to be heading the campaign for growing timber as a crop. Various concerns at least are known to be taking active steps toward the better handling of their forest lands, all of which indicates that the future supply of pulpwood is regarded as precarious. Most of the activity is in spruce, although the Mead Pulp & Paper Company of Dayton, Ohio, is conducting extensive experiments to determine the best species and methods for growing pulpwood in the Ohio Valley, which is essentially a hardwood region. Following is a brief description of the establishment of a demonstration in the growing of cottonwood on farm land not well suited to agriculture - perhaps the first commercial plantation of cottonwood in the Northeastern States.

Ten years ago a farmer in central Pennsylvania set out 250 cottonwood seedlings along the border of his farm. He watched these grow to their present size of 8 to 12 inches in diameter and 40 to 50 feet in height. A little meditation and calculation convinced him that these trees had made him more money than had his corn and hay. They required no outlay of labor and attention and yielded a commodity of constantly increasing value. In fact, their product is now worth $5 a cord in the standing tree as pulpwood. This served as a demonstration and suggested the idea of growing cottonwood for profit.

COTTONWOOD FOR PULP (Cont.)

In the spring of 1922 the farmer, Mr. Lynn A. Brua of Hollidaysburg, set out a 60-acre field with cottonwood on which he had continuously grown farm crops for 20 years. The soil was stony and subject to wet spots and in part to flooding from a stream flowing around two sides. In preparation the land had been plowed in the fall, and it was freshly disked in the spring before being set with 10-inch cottonwood cuttings spaced 9 feet apart each way, or at the rate of about 500 per acre. Thus, a total of 30,000 cottonwoods was set. The cost of the entire operations, including the careful preparation and accurate marking off the land for plant spots, amounted to $6.00 per acre, as follows:

Average Cost per Acre of Establishing Plantation

Plowing and harrowing (reharrowing in spring)	$1.50
500 Cuttings, including cutting and "heeling-in" over winter	.50
Setting 500 cuttings (including marking the spots) labor, 1-1/3 days at $3 per day	4.00
Total cost per acre (exclusive of taxes and interest)	$6.00

During the first summer (1922), the land was cultivated and the trees hoed to keep down a troublesome morning-glory vine at a cost of about $5 an acre. This feature could easily have been covered, if desired, by growing beans or some other crop between the rows of trees; no further cultivation, it is believed, would have been necessary.

How much timber will the 60 acres produce and what will it be worth? In 20 years, at a fair estimate, there should be not less than 470 trees per acre, each with an average yield of one-fifth cord of pulpwood. This makes a total of 94 cords an acre - a large figure, but not believed too large by any of the 5 or more different foresters who have looked over the ground. Assuming this yield and a stumpage value of $5 per cord (the present value), the gross return will be $1 a tree, or $470 an acre. A large paper mill is located at Tyrone, a distance of only 14 miles by a trunk line railroad, practically assuring a market. It seems likely that in 20 years the stumpage value will be double this amount. In 1921 the average cost of cottonwood pulpwood at the Pennsylvania mills was $22.58 a cord.

In view of the growing scarcity of pulpwood, the rapid growth of cottonwood, and small cost for establishing plantations, it is believed that Mr. Brua's example will be followed by other farmers having bottomlands of relatively low value for ordinary farm crops. One man - Mr. Brua - has seen the light, and seen it first-hand for himself. Last summer, in visiting the plantation, the writer expressed to Mr. Brua the conviction that in planting these forest trees he had become a pioneer whose example would be followed to an increasing degree.

NOTES ON PINUS STROBUS IN EUROPE

By W. A. Dayton, Washington

Among the addresses before the Biological Society of Washington recently delivered at the Cosmos Club, was a very interesting talk by Dr. Perley Spaulding of the Office of Forest Pathology Investigations, Bureau of Plant Industry, on a recent trip to Europe in connection with the white pine blister rust.

Dr. Spaulding states that there are quite extensive plantations of Pinus strobus in places in northern and western Europe; that the value of the species before the war was probably somewhat underestimated by European foresters, but that, as a result of the war, he believes the species is probably a little overestimated at the present time. This, he thinks, is especially true of Switzerland, where the species is apparently held in great esteem. Blister rust infestation is very extensive (perhaps especially so in Switzerland), the average for Europe being nearly 10 per cent. A tree once attacked by the fungus is doomed.

Bhotan pine (Pinus excelsa) of the Himalaya Mountains is being grown in Europe as a sort of understudy of Pinus strobus. It is probably more blight-resistant than strobus, but on the other hand sustains much greater damage from snow. This, Dr. Spaulding said, is very noticeable in Switzerland, where strobus remains uninjured, or practically so, in the regions of heaviest snowfall.

In Great Britain, Douglas fir leads among the American tree species so far as extent or success of plantations is concerned. Pinus strobus, Dr. Spaulding said, ranks about second, while a close third is a very interesting canker-resistant hybrid larch that has been obtained from crossing the European and Japanese larch. The Japanese larch is fairly canker-resistant, but the hybrid offspring seems to possess this resistant character to a much greater degree.

Dr. Spaulding said that there is a very striking relation of certain animals in Great Britain to the reproduction of conifers. The European jay feeds largely on the seeds of conifers and is an effectual agent in limiting tree reproduction; the rabbit is very much of a pest, so that it is necessary to establish rabbit fences if reproduction is to be obtained at all in many parts of Great Britain. Dr. Spaulding states that the European squirrel has acquired a marked taste for the sugary exudate from rust-infested white pines, and that this rodent frequently girdles the trees in searching for this sugar.

Dr. Spaulding states that sugar pine appears to be much more resistant to the white pine blister rust than is western white pine, but that apparently no white pine is quite immune to this parasite.

PROGRESS IN EROSION EXPERIMENT AT GREAT BASIN EXP. STATION

By C. L. Forsling

As many of you doubtless know, there is an experiment being carried out at the Great Basin Experiment Station to determine the effect of grazing upon erosion and streamflow.

In 1918, a bulletin entitled "Range Preservation and Its Relation to Erosion Control on Western Grazing Lands" was written by Sampson and Weyl, which discussed the early results of the experiment.

The two areas chosen, A and B, were grazed for four years so that the relation of erosion and streamflow on the two areas under identical conditions could be ascertained. As a matter of fact, there was a great deal of difference between the two areas on account of the character of the gullies, and especially the density of vegetation, which was only .15 on Area A against .4 on Area B at the beginning of the experiment.

The seriousness of the erosion may be judged by the fact that on Area A, an average of 1,725 cubic feet of soil was washed off from the 10-acre tract each year. Area A has now been entirely protected from grazing for three years, and the density of vegetative cover has risen to .35. Due to this change in vegetation, the run-off produced by storms has been reduced 36 per cent. The total run-off from the heavier storms which the ground has been unable to absorb completely, has also been reduced 36 per cent. The muddiness of the water has been reduced so that the amount of sediment washed from Area A is about 60 per cent less than what it was during the first four-year period.

There are a vast number of difficult points connected with this experiment, and the figures given above may not be entirely accurate, although they doubtless express substantially the results obtained by the protection of Area A.

CLIMBING CHIPMUNKS

By C. V. Cooke, Harney

Yes, they do climb trees. During the summer of 1921, the Drew Ranger Station was badly infested with chipmunks, and I spent a number of Sundays and evenings practicing on them with a rifle. On two occasions I remember distinctly of shooting them out of trees, once at an elevation of about twenty-five feet.--

WASHINGTON NOTES

A Complaint from the Alps: "There is a tendency to make the forests a jack-of-all-trades; mathematician and engineer, administrator and trader, farmer, scientist, hunter and fisherman; and why not also, I ask, wine maker and confectioner, so that he can offer the hunters after the roast and ragout their dessert and wine?"--Journal Forestier Suisse.

Cows on the Range Don't All Die of Starvation: A tally kept of unusual losses among livestock on the National Forest ranges during 1922, as shown in the various annual reports, lists the following: On one forest four cows were found dead with their noses and lips sticking full of porcupine quills. The poor animals in their efforts to dislodge the spears had only rubbed them still deeper into the flesh and evidently died of starvation.

Sixteen head of cattle died from eating dynamite left by careless miners on boulders, stumps and logs. No, Josephine, they didn't fall over a cliff and explode after eating the stuff but were poisoned. Why a foolish old cow will insist on eating dynamite is one of the unsolved problems of the day, but she does - and dies for her peculiar taste.

A large number of cattle were reported killed by careless hunters. California reported the most, which indicates that their hunters out on the coast need information as to the difference between a deer and a cow. A man, however, who can't differentiate in such matters is not a safe person to handle a gun.--W.C.B.

Col. Greeley has just returned to Washington from a trip to New Orleans, La., where he attended the hearings of the Senate Committee on Reforestation, which is holding meetings at various places to investigate forestry conditions. This is the committee appointed by the Senate on the resolution introduced by Senator Harrison of Mississippi.

FOREST PRODUCTS LABORATORY

Interest in De-Inking Paper: An average of one to two letters daily asking for information on de-inking are still being received. It is safe to state that we have answered 1,500 letters and furnished half of our correspondents with the mimeograph on this subject.

A Joliet, Illinois, paper mill is using a carload of wilkinite every two months, but after an adequate water supply is obtained for their presses, 70 tons of wilkinite per month will be used to de-ink old papers. A Wisconsin mill is about ready to begin operation, and indications in general are that the increase in the use of wilkinite will be as rapid as can be expected with the introduction of new prices.

We may now expect more inquiries from foreign countries, as a foreign press service has sent a release of the story to a large number of papers in Europe, the Orient, and Latin America. From the clippings received it is evident that French papers found the subject interesting, which seems logical because of the high price of pulpwood there and the comparative abundance of old newspapers.

Waste in Fence Posts: The sum of $100,000,000 annually wasted in fence posts is a conservative estimate of this loss. If to this is added the cost of replacement, the foregoing figure is easily doubled. The huge sum given is based on what might be termed a turnover of 500,000,000 posts. According to another estimate, 900,000,000 posts are used each year, equivalent to 825,000,000 board feet of lumber. Practically all are used without treatment, but if they were preservatively treated, the average life could easily be doubled and an annual saving of 412,000,000 board feet effected.

Lab. Entertains Wood Preservers: Forty-five representatives of big timber-using industries from all parts of the country recently assembled for an all-day meeting at the Laboratory. These men were invited to discuss with Forest Service officers the plans for next year's wood preservation studies.

Over $30,000 is being spent this year by the Forest Products Laboratory on strictly wood preservation studies. At least $20,000 more is being

FOREST PRODUCTS LABORATORY (Cont.)

spent on projects which closely relate to wood preservation. There is a continuous demand from the whole country for more information on wood preservation, and frequent requests are made that new investigations be started. As it is quite evidently impossible to cover the subject adequately with the money available, the idea was conceived of having these men visit the Laboratory to see how the money is being spent and what is being accomplished. This first-hand information and the intimate acquaintance of the various representatives with the needs and problems of the industry resulted in many valuable suggestions for the future program.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Forest Legislation in Nebraska: A Bill is now pending before the Nebraska State Legislature which provides for the establishment of a State Bureau of Forestry which will be under the direction of the College of Agriculture of the State University. The Bureau of Forestry will be composed of the Chancellor of the University, the Dean of the College of Agriculture, the Director of the Department of Conservation and Soil Survey, and the State Forester. It provides for the appointment of a duly qualified expert forester by the Chancellor of the University. By the terms of the Bill, the State Forester's duties consist of offering advice on the proper methods of handling woodlots and in planting, in the eradication of forest insect pests and diseases. The Bill further provides for the maintenance of a State nursery where trees will be raised for planting on State lands as well as for sale to citizens of the State.

The Bill was introduced through the efforts of Col. McCullough, Editor of the Omaha Bee, who is also president of the State Forestry Association. It contains many suggestions made by the Forest Service and is very much in advance of any forest legislation that has been heretofore introduced in this State. At this writing, its chances for passage are unknown.

Rise of Ex-Forest Service Man: Announcement has just been made of the appointment of E. B. Tanner as Chief of the Timber Section of the Bureau of Internal Revenue to succeed Carl M. Stevens, who resigned recently. Mr. Tanner entered the Forest Service in 1907 as an Assistant Forest Ranger on the Bitterroot Forest, in 1910 he was given an appointment as Scaler, and in 1913 he was promoted to Lumberman. In 1914 he was transferred to D-2 and in 1917 was promoted to Logging Engineer. Mr. Tanner resigned from the Forest Service in 1918 to accept a position as manager of the Trinchera Timber Company with headquarters in Denver, but left this company shortly afterwards to enter the timber section of the Bureau of Internal Revenue. Mr. Tanner's rapid rise in the Forest Service, as well as in the Internal Revenue, is the result of perseverance and hard study, and should be an incentive to all men in the Forest Service.

The Forest Service Exhibit at the Denver Auto Show caused a great deal of favorable comment and the comment was further supplemented by requests to repeat the exhibit in the future. The exhibit depicted a forest scene showing a summer home and an automobile camp ground.

DISTRICT 3 - SOUTHWESTERN DISTRICT

A Sign of Spring: "Having donned my suit of winter-weight plate armor and whetted up my trusty battle ax, I step three paces forward and deliver myself of the following creed: D-3 is the best District in the entire United States Forest Service. The Santa Fe Forest easily knocks the spots off all the other Forests in D-3, and the Cuba District is one beside which all other Ranger districts are mere waste places, forgotten of God and shunned by man."--E.L.Perry of the Cuba District.

Pueblos of New Mexico: There are nineteen Indian Pueblos located in New Mexico. All except one are on the Rio Grande watershed. These Pueblos are: Taos, Picuris, San Juan, San Ildefonso, Pojoaque, Nambe, Tesuque, Pecos, Cochiti, Santo Domingo, San Filipe, Jemez, Sia, Santa Ana, Sandia, Isleta, Laguna, Acoma and Zuni. These pueblos are within a radius of 150 miles of Albuquerque and are all accessible by automobile roads.

The Management Plan Report for the sawtimber type on the Coconino National Forest has just been approved by the Forester. The entire Forest is thrown into one working circle, to be managed on a 200-year rotation, which will produce yellow pine sawtimber of an average size of 21 inches d.b.h., containing 340 board feet of lumber. This rotation was established by a growth study. The Forest will be cut over twice during the rotation. The cutting cycle is, therefore, 100 years. Cutting has been in progress for many years and the report shows that 30 years of the first cutting cycle has passed, leaving 70 years in which the remaining accessible timber available for cutting, estimated at two and three-fourths billion feet, will be removed. The Forest will be managed on a sustained annual yield basis and the indicated cut is four hundred million each 10-year period.

Delighted Datil: Comments sometimes speak volumes and sometimes they leave a lot unsaid. The Datil Bulletin chirps "We are delighted to learn that New Mexico is to have a woman Game Warden," and leaves the world to draw conclusions. On the same subject, the Gila Bulletin reflects, "After having tried the game warden system in New Mexico, we decided on a change and will try a State Game Matron." Maybe the Gila is hilarious but that is not clear.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Effect of Treatment on Tie Renewals: In 1911 the United States Census Bureau reported that the average tie renewals per mile of track in the United States for that year was 336. In 1921 renewals on the Boston and Maine R. R. averaged 270 per mile, while for the ten-year period ending this same year, the average was 278 per mile. For the 10-year period from 1911 to 1920, inclusive, the average renewals on the New York, New Haven and Hartford R. R. were 330 ties per mile, while for 1921 their reports show 372 per mile. Compared with these figures the following roads, on which preservative work has been in use for some years, reported as renewals for the year 1921:

	Per mile
C.C.C. & St. L.R.R.	80
N.Y.C. R.R.	172
Rock Island lines	169

The A. T. & S. F. R. R. reported a reduction for the 10-year period 1904-1913 inclusive, from 261 to 179 tie renewals per year, or an annual saving of practically $700,000 in the purchase and installation of ties alone, this being particularly interesting to notice, considering the material increase of ton mileage per mile of track during that same period.

That's Gratitude! Forest Assistant and Mrs. Gibson went in dignified fashion to Kemmerer, when in the canyon a few miles north of Cokeville they came upon fires burning viciously in the willows by the creek. The couple dashed valiantly out, and with the aid of a canvas water bucket and canteen were soon combating the flames. Bearing, even in this lurid hour, the fire manual in mind, the worthy pair deduced that the fires had been deliberately set, and their indignation mounted high. Mr. Gibson succeeded in getting one fire under control and started for another, leaving his wife to complete the subjection of the first. As Mrs. Gibson was returning from the creek she saw two men come on to the road from the willows. Convinced beyond doubt that they were the culprits, Mrs. Gibson dashed another bucket of water upon the flames, and prepared to fight to the death. One of the men approached, asked the reason for her actions and admitted building the fires. Then ensued a wordy battle. Each demanded the other's authority for the other's actions. Neither could produce it. Some slight advantage lay on the side of Mrs. Gibson, as the mere man seldom got a chance to speak, but when he did, intimated that Mrs. Gibson was "hard-boiled," which helped none.

Eventually Mr. Gibson came back, having put out the other fire, and explanations were in order. It seems that the State Highway Commission had ordered the willows burned to improve the view of the road and the men had been praying for a wind to fan their fires for two days, then along came the Forest Service when they were just doing nicely.--Mrs. A.L.G., Wyoming.

DISTRICT 5 - CALIFORNIA DISTRICT

New Developments in Fire Suppression: At the recent joint Rangers' meeting held at Redding, the question of new developments in fire suppression was given consideration. Particular emphasis was laid on the use of the pump, the Newbegin extinguisher, the plow and scraper. The use of the pump on fires was demonstrated to the Forest officers and an interested crowd of citizens of the town. Two types of pumps, the Wonder and the Evinrude, were placed in the Sacramento River and the water pumped to a height of 75 feet. Comparative tests were made, in each of which the Evinrude was the favorite. It was far easier to start, delivered a larger stream at longer distances and had more power at all ranges from 200 to 1,000 feet; another feature in its favor was its compactness and the fact that it weighs only one-half as much as the Wonder.

Mr. Newbegin demonstrated his fire extinguisher in the following way: a large box 4'x10'x2', open at one side, and in which were placed a number of sticks heavily soaked with kerosene and gasoline, was set on fire. Belching flames 20 to 30 feet high were immediately extinguished by the application of 6 lbs. of the Newbegin material, which is a brownish powder. Newbegin actually walks into the flames, throwing the powder before him. A test of a burning snag and a brush pile was not so effective. Further detailed experiments with this material will be made in the near future. The more recent developments in the use of the plow and drags were also considered by the meeting.

Some Land Exchange: The Secretary of Agriculture has approved the proposed land exchange with the Weed Lumber Company on the Shasta Forest. By this transaction the Forest Service acquires 2,628 acres of cut-over land in exchange for 28 acres of similar character, or more than 100 acres for one. It happens that the 28 acres are near a new logging town being started by the Weed Lumber Company, and in order that they might control all land near the town, the company was willing to pay our price.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Stanton G. Smith, formerly Supervisor of the Snoqualmie Forest, is a stockholder in the Maine Feldspar Company and manager of the company's grinding plant and quarries. His address is Box 94, Auburn, Me. Smith is a member of the Rotary Club and president of the Auburn Rotary Club, and president of the Auburn Community Service, and as such ran a successful winter carnival and ski contest this winter. He still feels a great interest in forestry and the Service, and especially the Pacific Northwest, as these extracts from a recent letter show:

"The D-6 News Letter is always of great interest, as I prize it more than any other publication I receive.

"There are probably few Service men who have stepped into as good a business as I have, yet I find it next to impossible to put the heart into it that we all did in forestry."

Gone North: Ranger J. A. Thayer of the Cascadia District has been transferred from the Santiam to the Tongass National Forest, Alaska.

FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

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NOTHING'S THE MATTER WITH OUR LAND EXCHANGE BUSINESS

By C. J. Buck, D-6

Mr. C. G. Smith's article in the February 12 Bulletin is having a dampening effect on Forest officers' enthusiasm, or rather would have did such enthusiasm at present exist. Forest officers are just now trying to get at what the land exchange business really is - policies and procedure. It is a brand new thing, which looks good to the National Forest interests when viewed in large perspective. But, like everything else, it may have a "nigger in the woodpile." Mr. Smith's article will be supposed by some to uncover said "nigger."

The exchange business is yet too young to have produced either a large enthusiasm or to have uncovered even a small nigger. The enthusiasm will come, however, as soon as we all see with our own eyes what the exchanges will do for us in increasing the productivity of forest land, in removing the obstacles in all lines of work coming from private holdings, and in extending the Forest boundaries to adjacent forest-producing land. The Forester has well said that the land exchange law is the most important piece of National Forest legislation obtained in recent years.

Let each man read the new land exchange manual, as each man is now doing in District 6, and if he isn't enthused over the prospect, well - he hasn't much forestry in his heart.

Now, let's get down to brass tacks. Mr. Smith's article showed that in the Florida exchanges the Government secured 33,000 more acres than it released, or that on the average the forest area was more than doubled by each trade. This is a real and lasting accomplishment. It means better fire protection and timber productivity over forest-growing lands.

The trend of Mr. Smith's complaint on the Florida Forest is that it takes too long to get patent and that private owners are consequently discouraged. Can we get a quick schedule of action adopted by the General Land Office where land titles with abstracts, mortgages, etc., are involved? Where the title is good, we have had exchanges approved and patents issued in four months after being sent to the land office. The delays are largely due to imperfect titles and the long time it takes for private owners to have them rectified. One means of avoiding this delay has already been adopted, viz., have the local Assistant to the Solicitor examine the abstracts while the local negotiations are going on with the Supervisor and the District Forester.

It is not agreed that the matter with land exchange is that it takes too long in the General Land Office. The matter is not with the exchange policy or procedure, but with you and me. Have we thought about this work - made our plans as to what under the policy we can do now to make exchanges in the public interest and in the interest of the National Forests, and have we then gone about getting the applications we want and getting the results?

NOTHING'S THE MATTER WITH OUR LAND EXCHANGE BUSINESS (Cont.)

Land exchange business needs initiative from every Forest officer. It needs thought looking to the upbuilding of the Forest and persistent action to get results. It is not like a circular letter from Operation which hits you amidships and demands immediate action if you want to keep yourself on the job. It does, however, call forth one's own initiative and persistence, and the benefits to the National Forests and to forestry are such as to warrant the expenditure of our greatest energy.

ORIGINAL METHODS IN THE GRAZING BUSINESS

By W. C. Barnes, Washington

The reading of more than 150 annual grazing reports might be a dull, routine job were it not for the fact that Supervisors generally do not confine themselves to mere bald statements of fact, but inject into their reports an immense amount of personal point of view, relating little newsy items and occurrences which make their reports full of human interest.

The Supervisor of the Sevier, for instance, mentions the fact that the cattlemen have had a great deal of trouble with the registered bulls becoming foot-sore, as the ranges are extremely rough and rocky. Some inspired owner conceived the idea of shoeing the animals. This was done with excellent success, the bulls immediately rambling off into distant parts of the Forest where they had heretofore hung around the watering holes on the soft ground. The scheme proved a most satisfactory one, indeed, and can well be copied by stockmen in other Forests.

This brings to my mind the things we used to do in the "old days" in Arizona, when we drove our steers across what is now the Tonto National Forest, a journey of 250 miles. Many of them were bound to get tender-footed, and when they got to a point where we couldn't punch them along any farther, we used to lay them down on their sides and tack old worn-out saddle horseshoes on to their unwilling feet; after that they pranced along at the head of the trail herd. I can recall nothing funnier than to see several cars of our steers unloaded at a feed yard and several steers who had been shod on the trail but had not yet lost their shoes rambled out of the cars and tramped across the board unloading platform with a noise like a cat on a tin roof. To say that it interested the men around the stock yard is putting it mildly.

RATE OF GROWTH AND MORTALITY OF MATURE TREES - COMPARISON OF GROWTH IN VIRGIN STANDS AND ON CUT-OVER AREAS

By Hermann Krauch, Fort Valley Exp. Station

In marking timber in the western yellow pine type of Arizona and New Mexico, it is frequently necessary to retain large mature trees for seed. Many of these trees may also have some form of injury or defect, such as fire scars, heart rot, or dead tops.

In order to determine the rate of decadence in such trees, an experiment was initiated by the Fort Valley Station in 1910. Thirty-three trees, ranging between 26" and 42" D.B.H., were selected and tagged in a virgin stand near the Fort Valley Experiment Station, and 34 trees, between 22" and 38" D.B.H., on another area nearby, but which had been logged twenty-five years previously.

Following is the gist of a report based on compilation of data collected in the fall of 1922:

Eight trees, or 24.2% of the total number, in the virgin stand, but only one, or 2.9% of the total number, on the cut-over area died during the twelve-year period. The much lower mortality on the cut-over area is ascribed chiefly to the fact that the trees retained here were, on the whole, more thrifty than those in the virgin stand - a condition to be expected in view of the fact that in logging the largest and oldest trees are cut.

Table 1 shows the average growth in diameter of the present live trees during the past 10, 25, 50 and 100 years. This was determined by counts made on cores extracted by means of an accretion borer.

RATE OF GROWTH AND MORTALITY OF MATURE TREES - COMPARISON OF GROWTH IN VIRGIN STANDS AND ON CUT-OVER AREAS (Cont.)

Table 1.--Periodic Increase in Diameter (Inches)

	Virgin Stand					Cut-over Area			
	Years					Years			
	10	25	50	100		10	25	50	100
Per tree	0.51	1.27	2.63	6.05	----	1.02	2.28	3.78	7.03
Mean Annual	.050	.051	.053	.060	----	.102	.091	.076	.070

It will be noted that the trees in the virgin stand were growing fairly well even up to ten years ago. The mean annual growth has remained about the same during the past 50 years and is not much less at present than it was 100 years ago. The trees on the cut-over area grew considerably faster than those in the virgin stand. The mean annual growth was greatest during the last 10 and 25-year periods and almost twice as great as for trees in the virgin stand during the same periods. This shows how cutting in virgin stands causes acceleration in growth of the trees retained.

Table 2 shows the average increase in diameter of the trees 25 years before and after the year 1895 - i. e., the year in which the cut-over area was logged.

Table 2.--Periodic Increase in Diameter - 25 Years Before and After Year 1895

	Virgin Stand				Cut-over Area		
	Before 1895	After 1895	Diff.		Before 1895	After 1895	Diff.
Per tree	1.36"	1.27"	-.09"	---	1.43"	2.28"	+0.85"

In the virgin stand the growth was somewhat less during the last 25 years, there being a difference of about 6.5%. On the cut-over area the growth was considerably greater during the last 25 years, being 58% more than during the first period, i. e., before cutting. Fifteen of these trees standing at a considerable distance from any cut at the time of logging grew 32% more, while thirteen of them standing near the stumps of cut trees grew 82% more during the last period. The average increase in diameter of these trees 25 years after the area was logged was 1.55 inches and 3.12 inches, respectively, and an average of 2.28 inches for all as shown above.

WHERE DOES THE ALLOTMENT TO THE OGDEN SUPPLY DEPOT GO?

By E. W. Kelley, Washington

The following tabulation shows in round numbers the value of supplies sent from the Ogden Supply Depot to Districts one to six, District 8, and to the Madison Laboratory during the calendar year of 1922.

The value of the fire equipment distributed last summer is included in the District office figures. It is not included in the total to forests nor in the average to forests. No freight charges are included in these figures.

District	Total to Districts	Total to Forests	Average to Forests	Notes
1	$23,933	$11,406	$475	
2	8,186	6,269	233	- What do small units have to do with this small figure?
3	12,686	6,702	478	
4	18,742	9,567	398	
5	18,506	7,610	488	
6	23,695	13,667	627	- Why so large?
8	1,276	526	263	
2*	3,059	...	...	

*Weeks Law organization in District 2 considered as a unit.

District 7 is omitted because it is largely supplied from the Washington Supply Depot.

WHERE DOES THE ALLOTMENT TO THE OGDEN SUPPLY DEPOT GO? (Cont.)

District	Number forests receiving less than $500 worth	Number forests receiving between $500 and $999 worth	Number of forests receiving $1,000 worth or more
1	13	8	1
2	26	0	0
3	12	1	1
4	21	4	1
5	14	3	0
6	13	4	5
8	2	0	0

The Oregon Forest drew the largest amount, $1,518, followed by the Ochoco second at $1,418, and the Umpqua third at $1,307. These three Forests are the only ones that went above the $1,200 mark. The Flathead, Datil, Idaho and the Crater all reached the $1,100 limit.

RESEARCH ASSISTANTSHIPS AT UNIVERSITY OF CALIFORNIA

Information is received that two research assistantships, giving opportunity for graduate work in forestry, are now available each year at the University of California. The announced aim is to give properly qualified men an opportunity to broaden their training in forestry and at the same time perform useful investigations in forestry problems.

Graduation from a school of forestry of good standing, in which the requirements are not below those for the degree of Bachelor of Science (in Forestry) at the University of California, is a prerequisite. Only American citizens are eligible. In addition to the major problem to be studied, such graduate work will be registered for as may be necessary for the master's degree. Research assistants will not help in the teaching work of the university, but each of them will be required to devote his entire time for ten months of the year to an approved problem of research in any branch of forestry except for time needed for regular courses. Each assistantship carries an annual stipend of $500, payable in ten equal monthly installments. In addition, there is available a liberal sum to cover the cost of field travel and special equipment.

Applications for research assistantships should be addressed to Prof. Walter Mulford, Division of Forestry, 305 Hilgard Hall, Berkeley, California, and should reach Berkeley not later than May 1, 1923. The following information in the order given is required:

1. Name and address.
2. Date and place of birth.
3. College or colleges attended, and the principal courses pursued in each, with degrees received or to be received before July 1, 1923.
4. Practical or investigative field or laboratory experience in forestry or allied fields other than college courses.
5. If a graduate, the nature of work performed since graduation, with names of employers.
6. A photograph, taken not more than two years ago.
7. The applicant's plans for his life work in forestry.
8. The branch of forestry in which the applicant prefers to pursue research work as the holder of a research assistantship. The special probmen, if any, in which the applicant may be interested.

WASHINGTON NOTES

"Back to the Land," an article by Col. Greeley, appeared in the March 31 issue of the SATURDAY EVENING POST.

Arbor Day: At the request of the Forest Service, the Commissioners of the District of Columbia have proclaimed March 24 as Arbor Day for the District.

Thomas H. Gill has returned to Washington from a trip through South Carolina and Georgia.

New Forestry Magazine: Number One, Volume One of "Mexico Forestal," the organ of the Mexican Forestry Society, has just reached the library. The society was formed in 1921.

FOREST PRODUCTS LABORATORY

White Leaves Laboratory: David G. White, who for ten years has been connected with the United States Forest Service, left the Forest Products Laboratory, Madison, Wisconsin, April 1, to act as sales manager for the Sawyer-Servatius Lumber Company, Chicago.

Mr. White has been at the Laboratory since 1915. Before entering the Laboratory he spent a year in the Washington office and a year at the Products office of the Forest Service at Missoula, Montana.

His new position will entail many duties with which he is very familiar, since his field work has been extensive in the lumber distribution and consuming fields, and since he has done much special work in small dimension stock.

Woods Used for Cabinet Production: Of woods used for cabinet construction, the following native species are employed in greatest quantities: Oak, gum, maple, birch, yellow poplar, beech, ash, and walnut. Several foreign woods are imported as fine furniture material; of these mahogany easily ranks first.

Walnut has always been considered the premier cabinet wood of American trees; and because of its various desirable qualities can hardly be surpassed. Years ago walnut occupied first place as a cabinet wood followed by a number of years when the demand for this wood was very slack. Now, however, it has again sprung into prominence and is in greater demand than any of the other cabinet woods, even surpassing mahogany.

To Remove Old Paint and Varnish: The following formula produces a good preparation for the removal of old paint and varnish:

1 pint of benzol
1 ounce of paraffin
1 pint of acetone
1 pint of alcohol

Dissolve the paraffin in the benzol and add the acetone. This produces a clear liquid. The alcohol should be added just before the varnish remover is to be used. This precipitates out the paraffin. The object of the paraffin is to reduce the volatility of the liquid. The preparation is inflammable and should be kept away from fire.

Lye is sometimes used for removing old varnish, but it is a dangerous material to use because it darkens the wood with which it comes in contact.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Scouts Planting on National Forest: The Boy Scouts of Colorado Springs and Denver are displaying considerable interest in planting trees on the National Forests. On March 24, officers of the Pike Forest supervised the planting by 65 Scouts of 4,000 Douglas fir seedlings in Waldo Canon within the Forest. Another bunch of boys wishes to have a chance at this work in order to win the merit conservation badge, and arrangements were made to plant 2,000 yellow pine in April on this area.

The Boy Scouts of Denver are anxious to plant an old burn containing several hundred acres, which is situated on a steep slope above their summer camp near Silver Plume on the Pike Forest. This is in the Engelmann spruce type and arrangements will be made to have Forest officers supervise the experimental planting of several thousand trees on this area early in June, and eventually the Scout officials wish to plant the whole burn.

If the enthusiasm of the Scouts continues, the Pike Forest will be able to reduce their planting costs by having a large number of trees planted free annually.

D-2 Library Growing More Popular: From August 29, 1922 to December 31, 1922, there were 69 books loaned from the library to men in the field, and from January 1, 1923, to March 22, 1923, 80 have been sent out.

By the above tabulation, it will be seen that the employees of the Forest Service are making better use of our library all the time.

Game Refuge Bills Before Governor: The present session of the Colorado Legislature has passed through both houses eight new game refuge bills and made amendments to two existing refuges. This is considered an important step in advance in Colorado game protection. If the Governor signs these bills, we will have twelve game refuges in Colorado. Four others came up before the present session, but did not materialize, due to local absence of support. As usual, the constitutional question was raised and it looked for a time as if all refuge bills would be tabled. In fact, they were tabled at one time and brought out again after the constitutional question was more thoroughly looked into when the majority decided that game refuges in Colorado would not be in violation of the State constitution as it relates to game and fish and so-called special legislation.

DISTRICT 3 - SOUTHWESTERN DISTRICT

This is the Way It's Done on the Coconino: A compilation of the cut on Sec. 25 on the F. L. Co. sale shows a total scale of 2,421 M feet. The calipering crew during the winter found that a total volume of 1,060 M feet was left, making the total original stand on the section 3,481 M feet. Turning to our Timber Control Atlas, we find the estimate for the section to be 3,481 M. We doff our cap in respect to this old-time cruiser, who on $75 per and beans and bacon turns out such an estimate. A few hundred feet above or below - but to make it a bull's-eye - well, it inspires even us!--Coconino.

Cattlemen Want Controlled Public Domain: Arizona Cattle Growers' Association, in convention at Phoenix, went on record by resolution as standing strong for leased control for grazing of unreserved public lands. The association regards the Forest Service as proper administrator of these lands and recommends laws to bring these conditions about. The convention suggests that receipts from grazing privileges on these lands above costs of "administration" be used for the construction of highways. The cattlemen are opposed to the retirement of range improvements built by permittees and to reductions to established outfits for the accommodation of new applicants. They favor ten-year permits and such adjustments of the grazing fees and rules as are necessary to stabilize the livestock business on National Forests.

Quick Results: Ranger Thompson of the Prescott reports ~~/~~ that the new flood control dam on Cave Creek has been completed and has saved Phoenix from one flood already. About the first of February, 5 and 1/10 inches of rain fell at the Ashdale Ranger Station within 48 hours. Without the Cave Creek dam such a rain as this would no doubt have given Phoenix another flood similar to that of 1921, when all of the low parts of the town, including the basement of the State capitol, were under water.

National Monuments of New Mexico: There are six National Monuments located in New Mexico. These are Bandelier (Frijoles), Chaco Canyon, El Mora, Gran Quivira, Capulin Mountain, and Gila Cliff Dwellers. Two of the National Monuments are located within National Forests and the others on Public Domain. Three of the National Monuments are set apart to preserve the cliff ruins. El Moro, more commonly known as Inscription Rock, is to preserve the inscriptions of the early explorers and Capulin Mountain is a cinder cone of recent geological origin.

DISTRICT 3 (Cont.)

Former D-3 Man Comes Back: Mr. H. B. Herms, for several years in the Washington Office, has returned to this district and will be assigned to the District Office of Accounts.

New Addition to the Manzano: Last month 26 sections were added to the Chupadera Division of the Manzano by Presidential proclamation.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

The Seven Mistakes of Life:

1. The delusion that individual advancement is made by crushing others.
2. The tendency to worry about things that can not be changed.
3. Insisting that a thing is impossible because we can not do it.
4. Attempting to compel other persons to believe and live as we do.
5. Neglect in developing and refining the mind by not acquiring the habit of reading fine literature.
6. Refusing to set aside the trivial, that important things may be done.
7. Failure to establish the habit of saving.--W.M.C. Uinta.

New Forest School: Louisiana State University will be the first in the South to have a complete course in forestry. This course will be opened next September. The new course is an outgrowth of the summer forestry camps conducted by Major J. G. Lee of the Department of Forestry and Horticulture and Mr. V. H. Sonderegger, State Forester of the Conservation Department, in various sections of the State. Particular emphasis will be placed upon southern timber conditions, better methods of lumber manufacture, closer utilization, fire prevention, and reforestation.

Prominent Stockman Dies: Mr. W. N. McGill of Ely, Nevada, died on March 24, according to a letter recently received from Mr. Vernon Metcalf. Mr. McGill was one of the big stockmen of the West, and had large interests, especially in Nevada, not only in the stock business, but also in mining and other lines. He was a permittee on the Nevada Forest in the vicinity of which he had large sheep interests.

DISTRICT 5 - CALIFORNIA DISTRICT

"Let Your Light So Shine" - Sometimes we in the Forest Service boast more or less about the amount of publicity and educational matter, including letters, pamphlets, maps, etc., furnished the public in the course of a year, and about how many road and trail signs we have posted. However, there is one automobile club in California that sent out more of this material and posted more signs last year than emanated from all the hundreds of offices of the Forest Service combined. The Automobile Club of Southern California's record for 1922 was:

Touring inquiries answered	844,650
Maps issued	3,862,105

This club has now posted 93,000 metal-enamel signs on 115,608 miles of road in the West. This great club now has 80,000 members and is one of our best cooperators. It has given us $4,000 to date for development of public camps, and makes it a practice to print our fire propaganda matter on the maps issued by the club. After reviewing such a record, we take on renewed hope of some day being able to convert the "stand-patters" of the Service to the value of publicity.--L.A.B.

D-5 Special Use Business for 1922: The following figures from our annual special use report may be of interest to other districts:

The total number of permits in effect on December 31, 1922, was 6,642. This is an increase of 664 permits during the year. 4,421 of this number, or two-thirds, are charge permits, the other 2,221 being free. The

DISTRICT 5 (Cont.)

Angeles leads with 2,478 permits; Santa Barbara is second with 533, the Eldorado third with 513, Sierra fourth with 482, and ~~the~~ Stanislaus fifth with 394. These five Forests have two-thirds of the special use business of the District.

The five leading uses are: summer homes, 3,095, pastures 701, water transmission 594, drift fences 547 and hotels and resorts 261. From here they trail all the way down to one permit each for a church, fishing, hunting and trapping, fox and rabbit ranch, golf grounds, ice plant, mineral spring, electric railroad and observatory. Incidentally, this last permit, to the Smithsonian Institute of Washington, D. C., covers the highest building in the United States, which is situated on the summit of Mount Whitney, at an altitude of 14,501 feet. Another interesting fact is that practically all of the annual increase was in recreation permits.--L.A.B.

DISTRICT 6 - NORTH PACIFIC DISTRICT

A Gamey Bunch: During the last five years the Wenaha Game Protective Association of the Umatilla Forest has killed the following predatory animals and birds: 15 lynx, 987 coyotes, 33 skunk, 49 badgers, 95 weasels, 187 rattlesnakes, 144 wood rats, 2,357 ground squirrels, 2,950 pocket gophers, 1,751 hawks, 553 owls, 61 kingfishers, 10,471 magpies, 1,194 crows, and 978 sparrows.

Laying the Foundation: Seattle Boy Scouts are showing an active interest in forestry.

During the past six months Mr. Weigle has given 16 examinations to Seattle Boy Scouts seeking the merit badge in Conservation and Forestry, and Mr. Treen has given seven. Advantage is taken of the opportunity afforded in these examinations to give the boys a better understanding of the necessity of protecting the forests from fire. The final question in the Conservation test requires that the boys give some evidence that they have been of some help in making effective the laws of their State for the protection of birds and animal life. In answer to this question, a great many of the boys state that they have reported or fought forest fires.

Ryan - a Runner-Up: Six bids were received by the Colville for the Fisher Creek sale of western red cedar poles. The minimum price asked was ½¢ per ft. 6"x25' to 7"x35', and 1¾¢ per ft. for poles 8"x35' and larger. Mr. Ryan bid 1½¢ for the smaller stuff and 4-1/8¢ for the larger. This price is unprecedented, as it is an equivalent of $13.75 per M ft. for some of the cedar and $4.99 per M for the remainder.

Equipment Lockets: As a means of segregating fire tools and equipment from improvement and administrative equipment, the Chelan Forest is going to adopt the plan of keeping all fire equipment in lockers. Each Ranger will plan the number and size of units of equipment he will need and a locker will be built for each unit.

The lockers can be built on the wall of a tool house or barn, and each will be labeled on the outside the unit of equipment it contains; also, Form D-6 List of Fire Fighting Equipment will be on the door. All equipment except supplies, standardized for the unit, will be in the locker. It will be branded as per instructions and will be handy for use or inspection at all times. If Ranger A is at some distant point on the district and gets a report of a fire, he can call up Neighbor B and say, "Go over to the station and get all the equipment in the locker marked "Ten-man outfit," and bring it to C's ranch by nine o'clock." He will know that if B brings everything in that locker, he will have a complete outfit.

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(Contents Confidential)

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DEVELOPMENT OF FORESTS DOES NOT RESULT IN INCREASED FIRE DAMAGE

By John McLaren, D-2

Because of opposition recently encountered from certain public sources toward building roads in the Superior National Forest, I have had occasion to work up comparative statistics relating to fire damage on forests where large numbers of visitors have come in following comprehensive road and trail development. Possibly they may be of interest to the field generally.

The following tabulation indicates the fire record in the Minnesota National Forest for the past five years, and also indicates the estimated number of visitors annually for the past four years:

MINNESOTA

Year	No. of fires	Area N. F. land burned	Damage in dollars	Total cost of suppression	Visitors by years
1918	32	8,542	$7,750	$1,044	
1919	7	555	None	153	12,750
1920	17	527	"	317	37,580
1921	46	727	104	1,166	73,000
1922	30	358	278	739	100,950
Total	132	10,709	$8,132	$3,419	224,280

Forty-six fires, or 35 per cent of the total number, were caused by railroads.

Excepting the year 1918, when the big fires occurred throughout the State, it is noted that the area burned and damage are nominal.

In fact, a large part of the area burned consisted of hay meadows only.

Here, in a forest only recently well developed with roads, visitors have increased in great numbers. It is obvious that the greatly increased number of people has not resulted in a large increase in damage and area burned.

The Colorado National Forest record is as follows:

COLORADO

Year	No. of fires	Area N. F. land burned	Damage in dollars	Total cost of suppression	Visitors by years
1918	21	None	None	$ 84	
1919	32	56	$ 98	945	325,988
1920	26	10	24	212	339,259
1921	9	None	None	204	435,602
1922	26	103	911	1,201	445,857
Total	114	169	$1,033	$2,646	1,546,706

Fifty-two of these fires, or 46 per cent, were railroad fires.

The number of visitors has increased annually, but fire damage loss has not increased proportionately.

A large proportion of the damage and expense in 1922 was caused by six fires started by two escaped State convicts.

The San Isabel record follows:

SAN ISABEL

Year	No. of fires	Area N.F. land burned	Damage in dollars	Total cost of suppression	Visitors by years
1918	10	4	$ 2	$ 78	
1919	5	700	305	670	84,183
1920	5	30	100	263	117,657
1921	9	None	None	53	94,050
1922	7	19	50	274	104,781
Total	36	753	$ 457	$1,338	400,671

Road development has progressed rapidly in recent years, and although the number of visitors has increased materially, it is not found that fire damage and cost are rising.

Nearly all the area burned, the damage and cost in 1919, was the result of a lightning fire which occurred in a remote part of the forest.

The Pike record follows:

PIKE

Year	No. of fires	Area N.F. land burned	Damage in dollars	Total cost of suppression	Visitors by years
1918	31	72	$ 189	$ 399	
1919	29	66	90	341	338,935
1920	70	42	11	243	421,534
1921	22	44	16	360	294,595
1922	34	13	6	319	234,794
Total	186	237	$ 312	$1.667	1,339,858

Twenty-four of these fires, or 13 per cent, were railroad fires.

This forest is intensively used. Road development has progressed rapidly, and although 1922 was an exceedingly dry year, all fires were suppressed before any reached ten acres in extent. Twenty-five of the thirty-four were suppressed on areas of one-quarter of an acre or less.

Records of other forests might be cited similarly.

This indicates clearly to me that the fear of increased fire damage following increased transportation development is groundless.

As a matter of fact, that the reverse is true seems to me well established from the above records. There are but few guards employed on the forests listed above, and no increases have been made for protection since the more or less inaccessible areas have been opened up and old roads improved and made more attractive to tourist travel.

These roads have without question been a distinct asset.

Minutes count, and not only does a quick get-away influence the results in suppressing fires on small areas, but means of rapid transportation are of even greater importance.

The Superior Forest is now one of the most inaccessible in D-2.

Many fires must be reached by canoe and foot travel, supplies and equipment being, of course, transported in the same manner.

There are more guards employed on this Forest than on all the other Forests in the District combined.

No lookouts are employed on most of the forests in Colorado and Wyoming; there are two on each of the Forests in South Dakota and three on the Michigan and Minnesota each. On the Superior we employ six, and three State towers afford detection for parts of the Forest.

DEVELOPMENT OF FORESTS DOES NOT RESULT IN INCREASED FIRE DAMAGE (Concluded)

We have invested in a number of motor launches which are used on Birch Lake and along the Canadian border primarily for fire protection.

There is a heavy investment in towers, canoes, silkaline tents and fire-fighting equipment, some of which is special.

The fire record on the Superior for the past five years is indicated below:

SUPERIOR

Year	No. of fires	Area N.F. land burned	Damage in dollars	Total cost of suppression	Visitors by years
1918	54	1,363	$6,174	$4,947	
1919	23	1,823	288	9,486	1,322
1920	11	247	3,283	1,653	3,370
1921	16	4,090	6,893	4,583	11,154
1922	9	125	63	2,072	7,505
Total	113	7,648	$16,701	$22,741	23,351

Of these one hundred and thirteen fires, twenty-nine originated outside the forest and twenty-one of these were kept from entering.

Most of this expense and damage involved during the period came from these outside fires.

There is a possibility of a bad fire in the forest any year. Lightning caused nine fires during the past five years. Whether or not roads and transportation facilities are built and improved, we face the inevitable problem of protecting the area with greatly increased numbers of people going through the forest.

Traveling by canoe and afoot, these people get into localities where it is a slow tedious job to land fire crews, and a fire carelessly started by any one of these travelers may result in excessive damage and cost.

Roads affording auto travel will simplify the protection problem greatly, and personally, I am wholly out of sympathy with the fear that the fire damage will increase through opening the forest areas to travel. We have a distinct fire problem on the Superior and better transportation routes will simplify it.

The average cost for suppressing fires of various classes for 1921 was:

	Class A	Class B	Class C
Dist. 2	$3.88	$25.71	$139.23
Superior Forest	16.86	248.53	295.96

That the Superior is far above the average is due primarily to its inaccessibility.

I am a lover of game and wild regions, but a nominal road and trail program will destroy neither, and I am not prepared to admit that allowing people access to the forest via roads will increase the fire danger.

THE TRI-STATE DEVELOPMENT CONGRESS FALLS IN LINE

By C. R. Tillotson, Washington

The Tri-State Development Congress, made up of representatives from the States of Michigan, Wisconsin, and Minnesota, recently assembled in annual convention, drew up some resolutions which clearly indicate that influential men in those States are thinking along lines very similar to ideals which the Forest Service has distinctly in mind for that particular region. In respect to forestry, these resolutions are six in number. They cover the subjects of protection, regulation, taxation, conservation, acquisition, and farm forestry extension. The text of the resolution on each subject follows:

THE TRI-STATE DEVELOPMENT CONGRESS FALLS IN LINE (Cont.)

Protection

"Genuine and adequate fire protection which will permit the maximum possible volunteer of forest growth and maintain great areas of safe game cover.

Regulation

"Rather than destroying the old forest and generating more idle cut-over land, some just way should be found to permit, encourage or require that the remaining virgin timber to be lumbered so as to keep the forests continuously productive.

Taxation

"Just timberland tax laws which do not discriminate unfairly against growing timber crops, we advocate that fact finding investigation agencies prepare reports which may serve as the basis for such laws.

Conservation

"Protection of present State-owned and Federal forest land against short-sighted and selfish exploitation is imperative.

Acquisition

"The expansion of the present State and National Forests so as to absorb more nonagricultural but desirable forest land is urgent.

Farm Forestry Extension

"The millions of acres of woodlots included in the farms of the Lake States will become increasingly important to maintaining our supply of forest products; the farm woods are entitled to consideration and assistance along with other important farm crops."

It has long been contended by foresters, and this is particularly true of the State of Minnesota, that drainage of lands in the northern part of that State has been going ahead entirely too fast, and that these drained, unoccupied lands have been a fruitful source of destructive forest fires. The following resolution in respect to drainage is accordingly of interest:

"Intensive forestry and intelligent drainage do not conflict with each other. Our best forests are on well-drained lands. The mischief has been done by the haphazard, partial drainage of peat marshes surrounded by natural forests. Here both the marshes and the forests are threatened with destruction by fire. After the settlers have fully reclaimed their lands by drainage, removed the inflammable rubbish, which now so frequently covers the same, the fire hazard will have been reduced, but until that condition is secure, a vigilant fire protection policy is essential, and the inception of new, premature drainage projects should be postponed until the advance of settlers from the surrounding upland demands the drainage of the marshes and swamps for agricultural purposes."

AIR PATROL FOR NORTH IDAHO

The Potlatch and Coeur d'Alene Forest Protective Associations will enjoy the distinction of being the first patrol organizations in the Northwest to independently inaugurate air patrol to augment their detection service.

Arrangements have recently been perfected whereby each of these organizations will have intensive patrol of association territory during 100 days from June to September. If results are all that are expected, other North Idaho protection units will doubtless secure like service for 1924.

AIR PATROL FOR NORTH IDAHO (Concluded)

The plan involves the furnishing of planes and pilots by an experienced aviator, the associations to provide landing fields and observers.

Radio sets will be installed for reporting fires discovered by the planes, which, aside from patrol duty, will likewise be available for reconnaissance.

Until results of the coming season's operations are known, the full warden and lookout force of the organizations will be maintained so that the air patrol will constitute additional protection to the forests.

REPORT OF TIME AWAY FROM HEADQUARTERS

From reports submitted at Allotment Conference

A - In field or Forest
B - Total away from headquarters

District	1		2		3		4	
	A	B	A	B	A	B	A	B
Office								
District Forester	76	147	53	123	55	124	..	172
"C"								
Chief of Operation	125	146	108	163	88	102	162	168
Improv. Specialist	103	119	..	..	..	..	130	130*
Fire "	113	130	138	196	..	..	..	..
Telephone Engineer	167	204	..	..	..	..	..	..
"S"								
Chief of Management	86	122	85	117	50	59	155	178
Assistant "	80	95#	109	122	92	101	138	138
Logging Engineer	134	205	83	110	111	148	..	..
" "	191	213	..	..	..	..	..	..
Check scaler	262	322	..	..	..	..	..	..
"G"								
Chief of Grazing	128	163	87	100	114	136	137	152
First Assistant	109	119	105	130	..	..	151	236
"L"								
Chief of Lands	125	132	89	116	79	85	109	109
"E"								
District Engineer	108	108	48	69	44	74	114	152
Assistant "	147	147	102	123	267	267	..	..
Supervisors	112	133	101	131	109	137	111	126
Deputies	109	122	108	112	102	134	121	126
Forest Assistants	150	154	131	138	..	..	..	..
District Rangers	..	166	..	166	..	168	..	171

#Six months service only
*After June 15

District	5		6		7		8	
	A	B	A	B	A	B	A	B
Office								
District Forester	145	170	126	156	57	77	108	145
"C"								
Chief of Operation	123	133	87	105	81	88	94	125
Improv. Specialist	209	209	146	150	..	..	..	..
Fire "	157	177	95	129	..	..	..	..
Telephone Engineer	225	225	214	214	..	..	..	..
"S"								
Chief of Management	117	130	48	63	107	114	126	163
Assistant "	..	..	..	..	..	..	..	..
Logging Engineer	158	189	118	133	..	..	..	..
" "	..	..	152	152	..	..	..	..
Check scaler	192	192	..	..	..	..	..	..

REPORT OF TIME AWAY FROM HEADQUARTERS (Concluded)

District	5		6		7		8	
	A	B	A	B	A	B	A	B
Office								
"G"								
Chief of Grazing	105	118	67	95	37	37	..	..
First Assistant	165	166	..	..	..	..	...	..
"L"								
Chief of Lands	97	102	85	95	37	37	178	178
"E"								
District Engineer	..	97	66	90	105	106	..	..
Assistant "	..	..	55	55	..	..	..	..
Supervisors	118	142	101	115	86	119	102	119
Deputies	111	115	?	122	217	226	..	..
Forest Assistants	..	166	..	122	130	138	..	..
District Rangers	..	193	..	165	..	210	..	161

WASHINGTON NOTES

Mr. Herbert A. Smith left April 11 on his annual inspection trip to the western Districts.

Etiquette for Propagandists: The inventor of a device to anchor houses to their foundations so they won't blow away has tried to interest the Forest Service on the ground of saving timber. He sets a good example to all who indulge in "overdone propaganda": "All this waste," he says, "can partly be prevented to a limited extent."--W.S.

Paying Bills Promptly: Settlement for services rendered or supplies furnished by one department to another will hereafter be made promptly by the disbursing officers. Checks will be drawn in favor of the department concerned, and no longer will payment be made by the long drawn out and tedious procedure heretofore in vogue known as "Treasury Settlement." In other words, each department will pay its way as it goes and disburse its money by drawing a check and closing the transaction promptly.--P.D.K.

FOREST PRODUCTS LABORATORY

From the Ends of the Earth: Requests for information received in one mail by Timber Mechanics represent the world-wide recognition of our standing in the field of wood research. The inquiries came from South Africa, India, and New Zealand.

Auto Body Makers Want to Cooperate with Us: Representatives of the automobile body manufacturers of the country, in conference with members of the inspection rules committee of the National Hardwood Lumber Association in Chicago, unanimously adopted a resolution for the appointment of a joint committee to cooperate with the United States Forest Products Laboratory, and to defray all the expenses necessary to conduct a scientific study of sap stain in gum and interior dote in elm lumber with a view of improving stock suitable for the construction of automobile bodies.

This is the first time that industrial consumers and producers and consumers of hardwood lumber have joined forces to carry on such a scientific investigation.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

A Committee for Putting Over Forest Protection Week in Colorado has been selected and $50 appropriated by the Denver Tourist Bureau toward defraying expenses of local printing, etc. The committee consists of Lou D. Sweet, President of the State Forestry Association, LeRoy McWhinney of the Colorado Mounatin Club, Warren Boyer of the Denver Tourist Bureaus, and H. D. Cochran of the U. S. Forest Service.

DISTRICT 2 (Cont.)

Supervisors' Inspection Study Course: A committee consisting of Supervisors Clark, Conner and Richey has been appointed to sum up the work of the Inspection Study Course and submit recommendations.

The Abert Squirrel has finally been protected by law, the present session of the Colorado legislature having passed a bill closing the season upon them. This squirrel is not numerous throughout Colorado, but appears in the yellow pine district usually from 7,000 to 9,000 elevation. Black and gray squirrels are born in the same nest and seemingly live together as though they were the same color. They have been noted on the Colorado Forest since its creation in 1905.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Would Honor Supervisor: In the construction of an auto road to the summit of Mount Graham on the Crook, the people of Safford, Arizona, propose to call it "The Swift Trail.". The newspaper announcement closes with this paragraph: "This road which is going to be of so great a benefit in the way of health, happiness and prosperity has been secured for us through the untiring efforts of Forest Supervisor T. T. Swift, who for the last fourteen years has been in charge of the office here, and who has always worked unselfishly and at all times for the best interest of the people of the valley and of Safford. We would like, in order to show our appreciation of all that he has done, to suggest to the Forest Service that this road be called "The Swift Trail."

Alkali Ranges and Salt: "A theory of long standing," says the Lincoln, "advanced and sustained by certain old-time stockmen to the effect that cattle will not eat and do not require salt on alkali ranges, has been exploded." Ranger W. H. Woods and some stockmen have made a trial and the conclusion came in favor of the service requirement. According to the story, the stockmen even put up a wager, but the cattle, though on a strongly alkalied range, were very glad to get the salt. Supervisor Arthur has received a letter from one of the stockmen which completes the tale: "Dear Sir: Ranger Woods, W. N. Turner and myself tried out the salt on La Luz Allotment. The cattle did eat it, so I take off my hat and apologize and will put out salt at once. Woods won but would not take the money. Yours truly, Eli Moser."

A Veteran: Next month, Ranger H. L. Taylor of the Crook Forest will have been a member of the Forest Service 15 years and during the entire time he has served on the same Forest and has been under the same Supervisor. Can it be beaten?

Porcupines Menace "Frijoles": Supervisor Andrews of the Santa Fe is appealing to the Biological Survey for help. Porcupines have become so numerous and are committing such depredations on the pines in El Canon del Rito de los Frijoles that the beauty of that canyon is actually threatened. According to Ranger Lomley, who is custodian of the Bandelier National Monument within which the Frijoles Canyon is situated, the porcupines attack old and young timber alike. They are said to be making dangerous headway, and it is feared that unless the porcupines are eradicated the canyon may be denuded of its pine timber. No doubt the Biological Survey has a remedy that will be effective.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Where the Name Came From: The name of the Caribou National Forest is supposed by many to be derived from the graceful, fleet-footed animal of that name, indicating that it formerly abounded in that region. Although deer, elk, and badger are at home there and trout are plentiful in the streams, no caribou is known to have ever been seen in southern Idaho.

According to Frank M. Butler, a veteran ranger of the Caribou, the mountain and post office from which the Forest afterward took its designation, got their name in this wise:

Where the Name Came From (Cont.):

Origin of "Caribou"

About the year 1871, a man by the name of John Fairchild came to Soda Springs, Idaho, from the mining camp of Caribou in the British possessions. He was known to the general public as "Caribou Jack." He made a prospecting trip to what is now known as "McCoy Creek." This stream flows east into Snake River, about the middle of District No. 2, Caribou National Forest. There he found gold in paying quantities which became known as "Caribou's diggings." Soon there was a rush to the new find, and the streams were named for the men who located the best paying claims, viz., McCoy Creek, Keenan Creek, etc. The most valuable claims were found on Keenan Creek, and quite a settlement was formed at the junction of Keenan and McCoy creeks and was known as Keenan City. At one time it had a population of 300 or more.

"Caribou Jack" came to this locality alone and lived alone. He had very indifferent success as a miner, as he was of a shiftless nature. His operations were placer mining of a crude style. He sank one shaft eighty feet deep on the head of Keenan Creek, but failed to find bed rock. This old shaft is still in evidence. He continued in this vocation until about the year 1880, when he followed a wounded bear into the willows on Bear Creek, about two miles south of Soda Springs, where he was killed by the bear.--Caribou Notes.

District 4 People in Washington: Winkler says that the Washington office is not such a strange place to one coming from District 4 as might be at first supposed. There are lots of familiar faces there. He lists the following people:

Our former District Foresters L. F. Kneipp and E. A. Sherman, F. W. Reed, who was once Assistant District Forester here, Clinton G. Smith, ex-Supervisor of the Cache Forest, R. V. Reynolds of Lands long ago, J. E. Scott of Public Relations, and Messrs. Baldenburg and Cook, at one time connected with Accounts in this office. Then, also, there is W. B. Sparhawk, who was Forest Assistant in this District and worked on many Forests. Among the ladies are Mrs. Burnham, who at one time worked in Grazing, Miss Mary Moore, who was Mr. Sherman's stenographer, Miss McDevitt who, a long time ago, was mail clerk with Miss Patterson and later worked in the Supply Depot, Miss Childs, once of Lands, and last, but not least, Mrs. Sarah G. Totten whom we all know so well.

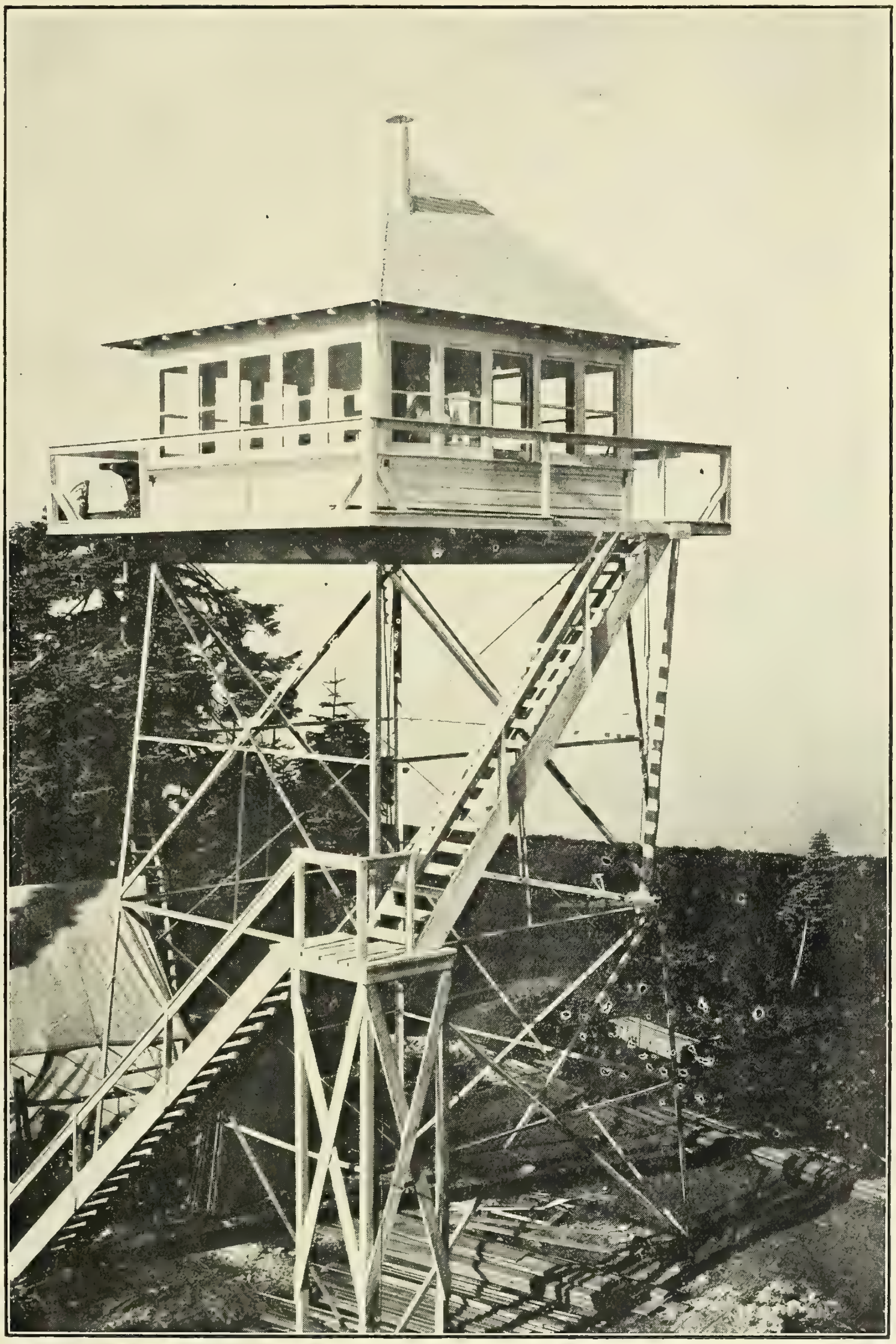
DISTRICT 5 - CALIFORNIA DISTRICT

Truth is Mighty and Shall Prevail: About a year ago we published in THE TIMBERMAN an article delving into the relative costs of sawing large and small logs. This was part of the general campaign to convince lumbermen that leaving small trees for seeding purposes is good business simply because of the excessive cost of manufacturing lumber from them. Our study showed a sawing cost per M of $5.65 for 8" logs and $1.57 for 40" logs. Those figures, when presented to lumbermen, were seriously questioned, and the implication was made that they were unworthy of much credence.

In the AMERICAN LUMBERMAN for February 10, 1923, page 65, are given results of a similar study made by a representative of the Long-Bell Lumber Company. His figures are $6.16 for 8" logs and $1.60 for 24" logs, or slightly above the Forest Service estimates.--S.B.S.

No Move at San Francisco: The possibilities of providing adequate quarters in the Post Office Building at San Francisco for the District offices have vanished. The Area Coordinator submitted an adverse report against having the Post Office Department shrink on its space requirements and make room for the Forest Service.

The Perry Building will therefore continue to be the home for the District office. About a year ago an investigation made seemed to indicate the possibility of providing office space for the District office if the Post Office Department could be persuaded to make some shifts. Had such accommodation been made, the Forest Service would have been able to save the money now spent for rental for present quarters.



GETTING A LOOKOUT UP TO THE JOB

BLACK FOX LOOKOUT
SHASTA NATIONAL FOREST

TOWER 30 FEET HIGH; COMBINED LIVING QUARTERS AND OBSERVATORY 14 FEET SQUARE

Designed by J. W. WYNNE

☆ ☆

The tent shown in the picture was occupied by the construction crew. It has no other part in the scheme of affairs on Black Fox Lookout.

(Ogden-2-9-23—2,050)

Service Bulletin

U. S. FOREST SERVICE

(Contents Confidential)

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DIVISION OF RESPONSIBILITY

By John H. Hatton

(Ogden Grazing Conference)

There are certain fundamental principles of organization within the Forest Service which are now generally agreed upon, I think, and which are well for us to keep in mind in discussing any division of accountability or responsibility among the various classes of Service personnel.

I think I may sum up in the beginning the whole trend of the matter by stating that it is the general policy to extend authority and place responsibility as much and as rapidly as possible to the man nearest the job or the work to be performed; with only such oversupervision or direction as will make for the greatest efficiency and progress. This, I take it, is the ideal or objective in Service organization. How closely the Service as a whole or any branch of the Service is getting to the ideal should be revealed by analysis.

There is an old saying or proverb, and I think it is a correct one, that "responsibility is half of life." In other words, it makes for the rounding out of character and for higher efficiency. If this be true, it is something to be coveted or sought after rather than shunned. "Passing the buck" is a language entirely foreign to this principle. The officer, to grow and develop, should have responsibility pushed toward him, not pulled from him, and such an officer is willing to take it on even at the risk of profiting by occasional mistakes or errors, or possibly losing favor by such errors. I think such mistakes, if made, would not be at all serious. In fact, I believe the more final the responsibility, the less likelihood for mistakes or errors. There will be greater care exercised in seeing that the job is finished and perfect than when the officer has the feeling that the next fellow will catch what he misses. I think this is especially true in putting out policy statements. Established policies will be more closely adhered to where responsibility is more or less final. This may sound like a travesty on human nature because human nature generally likes to avoid the possibility of criticism. Nevertheless, I believe I am correct in the conclusions I've stated.

Of course there are different degrees and spheres of responsibility, and there is such a thing as overloading the subordinate before he is trained or ready. I like, however, to think of the subject from this standpoint - of putting responsibility on the individual - not from the standpoint of making each officer from the chief down through the various subordinates to the man on the ground responsible in the last analysis for all the intimate details of the job to be done.

In the early days of the Service we didn't hesitate to delegate responsibility; and as I think back and recall how men we knew little about were put in charge of Forests with limited experience, few instructions, and little help, and how these men in practically every case made good, I believe we can afford not only to pass out authority that we know men will redeem, but even go farther and take what seem to be chances, sometimes, on men making good.

DIVISION OF RESPONSIBILITY (Cont.)

Contrast the entire procedure with that of to-day. Now we hedge about our personnel with voluminous memoranda. We build up a record of plusses and minuses, positives and negatives, and we are very careful not to leave out any of the negatives and minuses. We put a slide rule on the officer and we measure his mental and personal characteristics, the shape of his legs and size of his feet, as it were, and we possibly get out of it a 50 or 60 per cent ranger. Then we go into a brown study and wonder where we are going to get material to fill the vacancies.

I believe there is such a thing as the higher executive knowing too much detail. He is apt to try to do too much of the actual work himself, and thus detract not only from his own value as an executive, but he will not bring out the best in his subordinates. We hear of men coming up from office boy to president, and there have been and are noteworthy examples of this, especially in railroad and such organizations, but I wonder if a man may not become as valuable in organizations such as ours if he jumps or passes lightly over some of the intermediate grades. I believe he can, and perhaps be a more valuable executor than if he felt he must know and be able to actually do all the intimate details of every job. While it is usually desirable, it is not always necessary to come laboriously through every intermediate grade, in my judgment, although he should be given a chance to learn something about them. The biggest thing, as I see it, is the proper perspective and point of view, or the ability to get it. Give me that in an officer and I don't care whether he comes from New England, or from Colorado or California - I was going to say in our grazing administration, I don't care whether he knows a cow from a steer, but I won't put it quite that strong. But I do want to say this: That I don't care whether he has served a long or short apprenticeship in every one of the intermediate grades. In fact, I believe such men come to the organization untrammeled by the past or by old-time prejudices, and are in a better position to look on things with a broader outlook, to get a better perspective and to show better discernment in picking out the essentials which make for advancement and progress.

From the ground up our personnel are rounded out, as far as actually knowing about and doing the many detailed things necessary to do are concerned. They are not piece workers in the ordinary sense. Outside of certain specialists the man on the ground actually does the work as well as his superior, if not better, and the main function of the higher-ups is to make available for general application not only the improved methods or things that he or his specialists find out, but to correlate and make available and of general help the good ideas and methods discovered by the man on the ground who is doing the actual work, and who is really in a position to discover ways and improved procedure that no one else is in a position to discover.

In one of his discussions Colonel Greeley said (and this seems to restate my first conclusion): "The most farsighted thing Mr. Pinchot ever did to insure the future growth and strength of the organization which he created was the establishment of the district offices and shoving responsibility out into the field. Personal accountability is part and parcel of the same principle; we are simply giving it a keener edge." (To be continued.)

A RESTLESS FORESTER

By Ward Shepard, Washington

Walter Lowdermilk's career in forestry, begun as a student at Oxford, continued as a ranger in Arizona, transferred to the forestry forces in France during the war, and taken up again in the Forest Service as liaison officer in Research in District 1, now finds him a professor of forestry in the University of Nanking, China. Apparently Lowdermilk is bent on a sort of forestry circumnavigation of the globe, and a recent letter gives some interesting glimpses of his latest post:

A RESTLESS RANGER (Concluded)

"My work will have to do with the amelioration of the economic strain resulting from the wasteful use of the natural resources of the country. The only remnants of the original forest cover are found within the Buddhist temple enclosures. As one might suspect, the Chinese type of civilization has not made provision for forest perpetuation. The forest cover on the hills has been repeatedly removed and at the present time forests are not permitted to regain their place, because the grass and every other vegetative cover is annually cut - literally shaved off - bound into bundles and carried by coolies into the city for fuel. This grass fuel is used for cooking only. Fuel for heating is practically unknown among the Chinese......

"Along with the shortage of forests are the other unhappy results of denuded lands. And it is this that we are hoping to be instrumental in remedying. I am glad to tell you that a grant was given to the College of Agriculture and Forestry for the project of permanent famine relief, or for the removal of causes of famines. This grant is for $675,000 gold. It is more than likely that much of this sum will be matched by funds from the Chinese. This means that our work is pretty well provided for. We can go ahead with some sense of satisfaction.

"At the present time I am studying the Chinese language ...... I am only teaching three classes a week, for the language is supposed to take up one's time pretty fully. Next year I shall begin the rather extensive trips for a general survey of the problems."

WANTED: AN ASSISTANT STATE FORESTER

By E. E. Carter, Washington

Mr. C. G. Sauers, Assistant to the Director, Department of Conservation, Indianapolis, Indiana, states that Indiana wishes to secure an assistant to Mr. Charles C. Deam, State Forester. The qualifications of the man and the scope of the job as stated are:

"It is necessary that this man have some experience in hardwood forestry typical of Indiana. He should have a good presence and be able to deal with the public. We propose to use this man to run the Forestry office, carry on some experimental work at the State Forest, assist Mr. Deam in the inspection of woodlands which are to come under our taxation law, and to carry on propaganda work."

The salary which the State is willing to pay is $1,800 to $2,000 and traveling expenses. If a man had wide experience and be particularly fitted for the work, this salary might be increased somewhat.

If anyone is interested in this position and can meet the qualifications described, he should correspond directly with Mr. Sauers.

WORDS! WORDS!

"Why send a battalion of words after an idea when a single sniper will do better?" This epitomizes the worst fault in most writing - verbosity. That it is not limited to modern days is shown by a translation of the 23rd Psalm made in 1689 by an English ecclesiastic. No one will ever forget the simple beauty of this familiar line from the King James version: "He maketh me to lie down in green pastures; he leadeth me beside the still waters." But the wordy Dean translated the passage thus, as quoted by a recent writer:

"For as a good shepherd leads his sheep in the violent heat to shady places, where they may lie down and feed, not in parched, but in fresh and green pastures, and in the evening leads them, not to muddy and troubled waters, but to pure and quiet streams; so hath He already made a fair and plentiful provision for me, which I enjoy in peace without any disturbance."

What a difference! The first is so real as almost to seem a thing rather than an idea; the second gives you a headache. It will pay anyone who wants to improve his writing to analyze these two passages and determine why one will forever grip the human heart and the other remain buried in its own dust.

The Bulletin will give a free subscription for the answer that shows the best analysis in the best English.--W.S.

SHOULD WE STOP SELLING TIMBER?

By E. W. [illegible], D-2

Mr. Bates' article "Is Our Sales Policy Consistent," Washington Office Bulletin, March 19, gives cause for reflection. He makes the following points in his article:

1. That increased sales of National Forest stumpage will increase consumption which is considered undesirable.

2. Silvicultural sacrifices are being made in our sales practice to increase sales.

3. We are losing money by selling our stumpage now.

4. That we are in fact practicing timber mining. I would like to offer the following comments on these points:

1. The placing of National Forest stumpage on the market will not increase consumption except as it influences price, and in view of the present situation the Forests could serve no higher purpose.

2. This point is not clear for, as far as I know, there are no silvicultural sacrifices being made. It is true that there are places where complete utilization is not being obtained. However, to say that a silvicultural improvement is not being made by the cutting does not conform with the conditions on the ground as I see them.

3. It was refreshing to note a technical forester who had separated his calculations from his compound interest tables. But why do so in this particular case? If the $54 calculated as the immediate return were put out for the 20 years at 4 per cent compound interest, the loss due to increased stumpage which, because of the immediate cutting, causes all the loss shown by Mr. Bates, would be more nearly $25 than $90.

4. Conclusion III is not fair in that Mr. Bates assumes that we are not and will not practice forestry. As a matter of fact, he can have no basis for assuming that we are not and will not get a sustained yield. I know of no case in this District where the estimated yield is being overcut. Mr. Bates himself assumes entirely the viewpoint of the timber miner, in that he implies that we will go ahead and cut in 30 years and not operate on a sustained yield basis. If we can cut a million feet from a working circle now, how can we cut more 20 years from now if there is no growth in the meantime? We simply lose the interest on the money we get from our present cut, as well as postponing the day when we can get our forests more nearly on a normal basis. If Mr. Bates had assumed that he was clear cutting that acre and removing the 30,000 feet and that there were 160 of those acres, one to be cut each year of the 160 year rotation, his calculation would have more nearly fitted what we are striving for and are obtaining in a rough way and his figures would have shown a dead loss. In other words, if his hypothetical case had been based on forestry practice rather than timber mining, his conclusions would have been entirely different.

WASHINGTON NOTES

Mr. Raphael Zon of the Washington Office recently delivered before the Brooklyn Academy of Arts and Science a lecture entitled, "Forests and Human Life." This talk was not in the form of propaganda but consisted merely of facts and interpretations.

"What's Wrong With Cattle?" is the title of an informative article by Will C. Barnes appearing in the February issue of THE FIELD ILLUSTRATED.

Muchas gracias! "Editor, 'Service Bulletin'

"Dear Sir: Perhaps the enclosed remarks may be available for your ever interesting family journal. I always read it more carefully than I do the daily paper or the Atlantic Monthly."

Another Short Cut: Effective July 1, the letter of authorization from the Secretary of Agriculture to the Forester will be modernized according to advance information, in connection with the authorization for the publication of advertisements. At present timber sale, grazing and other advertisements can be placed only with newspapers approved in advance. Under the new order of things it will be unnecessary in the future to specifically itemize the various publications in advance of the publishing of advertisements therein. This new authorization is to be effective by the incorporation of the following in the general "L.A." to the Forester: "to authorize the publication of such advertisements as may be necessary in such newspapers as will best serve the need of the United States."--P.D.K.

"How Forests Feed the Clouds," and "Forests and Human Progress," are the titles of two lectures by Raphael Zon, which will soon appear in a book of assembled lectures given by various men before the summer school at Columbia University. This book will be published by Doubleday, Page & Company through the cooperation of Dr. Caldwell of Lincoln School at Columbia University. A copy will be placed free of charge in the library of every high school, of which there are two or three hundred thousand.

DISTRICT 1 - NORTHERN DISTRICT

A Personal Achievement: Not many men in the Service ever have a chance to show the value of their services to the Government in dollars and cents as clearly as James W. Girard, Logging Engineer in District 1, has recently. How many of us could make good if we had the chance like Jim did is an open question. While expressing the value of three or four days in dollars and cents sounds all right, the cents may as well be dropped in this case, for they are insignificant. In fact, what Jim really did can be rounded off to the nearest $25,000 or $50,000. In the long run probably the best we could do would be to name it in the nearest $100,000. But to the point: What did Jim do?

When the big Malheur chance was readvertised at the reduced price of $2.00 per M, Jim's feelings were rather hurt, and his loyalty to Uncle Sam spurred him to do something to prevent a sale in which he felt said Uncle would not be getting full value. You see, Jim had helped make the appraisal of this chance, and his judgment was at stake. Jim knows timber in big terms, the costs of logging and milling to the nth degree. So he just ran over to see some of the north Idaho operators. He only saw one, and this man, as a dark horse, was the successful bidder. He never even saw the timber, but based his bid of $2.80 entirely on Jim's judgment. He simply asked Jim the facts about the main features. "That's good enough for me to shoot millions on. The timber is mine," he said. And so it is, and so one man in the Service, by his initiative and by the reputation he has for knowing his business, earned for his employer in three days more than his salary for a couple of life times.--T.S.

Timber Sale on the Coeur d'Alene: This district is about to advertise 70 million feet of timber on Burnt Cabin Creek on the Coeur d'Alene, of which 79 per cent is white pine. The sale will include a rather interesting provision requiring the purchaser to construct ten miles of main line railroad, which will become the property of the United States at the end of the sale. The entire cost of the railroad will be depreciated against the Burnt Cabin timber. About 600 million feet of merchantable timber in the Little North Fork of the Coeur d'Alene will be made accessible by further extensions of this railroad, and in future sales the Service will, of course, get the benefit of the railroad construction to log the Burnt Cabin chance, which will result in considerably higher stumpage prices. The Burnt Cabin timber is being advertised at $4.50 per M for white pine, $1.00 for spruce, and 50 cents for fir, larch, white fir, and hemlock. The competition for white pine in the Coeur d'Alene region is very keen, and five or six bids are expected. The Little North Fork Working Circle should maintain a sustained yield of about 15 million feet, and the railroad will serve as a permanent means of transportation.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Delinquent Grazing Fees: The record for the District shows about $4,350 in 1921 fees still delinquent, covering 34 cases. For 1922, it shows 238 cases with $11,000.

Increase in Compensation for Injury Cases: The Medicine Bow Forest has had ten compensation for injury cases in less than a year. The causes include injury from using an ax (?), a saw, horse kicking, lifting on a rock, falling down on rocks, horse stepping on foot, and from using snowshoes(?).

The desirability of returning to field tests for ranger and forest assistants is suggested to include use of ax, saw, snowshoes and care of horses.

Edith R. Mosher Publishes Constructive Tree-Study Lessons: Miss Edith R. Mosher, formerly of the Washington office, some years ago compiled "Forest Study in the Primary Grades," which was published by the State of Michigan in conjunction with the Forest Service, and has since been used as a textbook in the public schools of that State. She is now living in Centerville, Michigan. While in a sanitarium in Albuquerque, New Mexico, she finished her university course, securing the degree of A.B. She has recently published, through C. W. Bardeen & Company at Syracuse, New York, a series of five graded books on Nature Study.

DISTRICT 3 - SOUTHWESTERN DISTRICT

What a Decade has Done in Roads: During the last ten years many miles of Forest roads and trails have been built in D-3. Of the major projects Arizona has had 137 miles and New Maxico 126; in minor roads Arizona 672 and New Mexico 345. Trails 1,022 miles in Arizona and 1,165 in New Mexico have also been made. The cost of these roads and trails has amounted to $3,021,592.

A Coronado Shade Tree: A cottonwood tree 26½ feet in circumference d.b.h., and about 70 feet high was recently discovered in Happy Valley, Rincom District, by Messrs. Grubb and Olson. We don't claim that this is the largest tree in District Three, but it represents fairly good growth for a region that is, in some quarters, supposed to be capable of producing nothing but cactus and brush.--Coronado.

Grown-up Scouts: Opportunity is to be given a group of men to occupy a scout camp and romp for a week. Camp Lawton on the Coronado has become very popular with boy scouts. Several hundred of them enjoyed its outings last year. This year the scouts propose to turn their camp over for a part of the summer to business and professional men of Tucson and neighboring towns who need the kind of an outing boys enjoy. The boys think their dads who grew up before the days of scouts did not, of course, have near the fun they have now, and wish to show them what a wonderful place for a good clean time a boy scout camp is. To be sure, the boys will caution the big scouts to be careful not to burn the woods down and to leave a clean camp.

Shooting Holes for Telephone Poles: Santa Fe says it is practical and cheap. According to the Santa Fe Bulletin, experiments made on that forest have demonstrated that holes for telephone poles may be successfully shot out at a reasonable cost. A driving bar with a turned over head should be used. After being driven to the depth at which it is desired to set the pole, the bar hole is loaded with TNT or picric acid in amount sufficient to blow out at top of ground. A little cleaning out makes the hole ready for setting the pole.

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IT CAN BE DONE

Edward Guest

Somebody said that it couldn't be done,
  But he, with a chuckle replied,
That may be it couldn't, but he'd not be one
  To say so till he tried.
So he buckled right in, with a bit of a grin
  On his face - if he worried he hid it.
He started to sing, as he tackled the thing

DISTRICT 6 - NORTH PACIFIC DISTRICT

It's Getting Over: The smoking cars on the Northern Pacific Railway have a neat sign about 6" x 8", white card, red border, black letters, which reads:

> CAUTION
>
> Avoid Fires
>
> Do not throw lighted matches, cigarettes or other fire from windows.
>
> Northern Pacific Ry. Co.

The smoking cars of the Oregon Electric out of Portland, up the Willamette Valley, carry a similar card. The Tacoma Shriners used a windshield sticker at their annual convention last summer and at other times, and will use the same this year on their pilgrimage to Washington, D. C. The sticker is 5" x 24", bright yellow. In the center is Mt. Rainier and the Tacoma Shrine Emblem, while in very heavy black letters on the left are the words: "HOT SANDS," and on the right, "PUT OUT YOUR FIRES."

An Enviable Record: Supervisor Brown of the Fremont is in on pretty near everything that takes place in his country, which shows that the community appreciates a public spirited Forest officer. Brown is - President of the local Chautauqua Association; member of the Executive Committee of the Lakeview Rod & Gun Club, Director of the Lakeview Round-up Association; Master of the Masonic Lodge; Scribe of the Royal Arch Masons; Treasurer of Lakeview Encampment, I.O.O.F.; member of Building Committee, Methodist Episcopal Church (just completed a $40,000 church); wide acquaintance with school teachers and officers, Boy Scouts, and County Courts of Lake and Klamath counties.--J.D.G.

Scaler Farnham of the Siskiyou Remarks: "Yea, Boy, the Study Course am here, sho' nuf. When I master this Land Exchange subject I'm going to hang out my shingle. However, I'm like the fellow who kicked about too much salt in the bread, 'It's just the way I like it.'

Good stuff for a fellow to put under his hat all right."

DISTRICT 7 - EASTERN DISTRICT

The 1923 Survey Program of the Allegheny Purchase Unit is an ambitious one. It is estimated that approximately 100,000 acres offered by some 60 owners and made up of about 115 tracts will be surveyed. To accomplish this it will be necessary to run approximately 600 miles of line. It is planned to maintain three survey camps of two crews each. An Examiner of Surveys will be in charge of each camp and will be assisted by two transitmen. The Examiners of Surveys who will be in charge of the work are James Denman, A. R. Kinney, and A. A. Riemer. Transitmen will be selected from the eligible list resulting from the recent transitman examination. The personnel of the three camps will include some 35 to 40 men when recruited to full strength.

A RATHER NEAT COMPLIMENT ON FOREST SERVICE ROAD WORK

(Clipped from the Star - Mena, Arkansas)

Stretching away westerly from Acorn in the northwest corner of Polk County, like a mighty tentacle from the city spider, winds the recently constructed highway, fostered by the Forest Service Department of the Government, and under the constructive direction of one of the best road builders in the South, M. L. Bell, formerly of Vandervoort.

To one who has traveled slowly over it, closely observing all details, the striking impression is made that marvelous results follow when good judgment is brought to bear on laying out the advantageous location of a roadbed above possible overflows; at times leaving the ancient routes once taken by the early pioneers, of least resistance, shortening or elimination of curves; placing of durable culverts, and, in fact, making a complete job of it.

The old-time methods have given away to modern ones wherein stump-lifting powder is supplemented by three and four teams attached to heavy graders, which cleave their way through tenacious roots and stones and leave a nicely crowned and packed surface, over which traffic can speed, in keeping with ways of modern business.

STAG SMOKER HELD BY WASHINGTON OFFICE

By Claude Ballard

The "Boys" in the Forest Service got together at the University Club Thursday, April 19, in an old-fashioned Smoker. Several officials of the Interior Department were present, as were also several members of the Department of Agriculture outside the Forest Service. The program consisted of selections by an improvised quartette composed of Messrs. Norcross, Barnes, Scott Ballard, and Hilton. Paul Kelleter, better known as "Shorty," rendered a few choice selections on the piano. He also acted as pianist for the quartette. Mr. Barnes gave a talk on incidents in his early life that proved very interesting to the members present, some of whom never knew that Will was a sure-enough Indian fighter in the days that Geronimo and his band roved the plains. Inman Eldredge told of his early days in the Forest Service, and would up his talk with one or two good stories. Messrs. Mattoon, [illegible], [illegible], and [illegible] gave a court-room scene that was a "scream." After the entertainment [illegible]" were served to the assembled multitude.

These Get-Together meetings are very much enjoyed by members of the Service, and they have got to be annual affairs. "All left with the feeling that it was good to have been there."

MINOR ROADS IN PENNSYLVANIA

By Roy Headley, Washington

The following extract from the newly issued Manual of the Pennsylvania Department of Forestry is an interesting expression of the judgment of Pennsylvania Foresters on proper standards for Forest roads:

"Regulation A-28

"A standard forest road of the Department is 7 feet from the inner edge of one ditch to the inner edge of the opposite ditch, and with a grade not to exceed 8 per cent. Variations from these standards will be made only with the approval of "O".

"The need for roads for forest protection and administration is so great that a greater length of narrow serviceable road is more important than less road of greater width. Because of soil conditions or the needs of traffic, departures from the standard width may occasionally be necessary. It may also be necessary, in order to avoid unwarranted expense, to permit a grade in excess of 8 per cent for a short distance. In such cases the District Forester (between the District Ranger and the Forest Supervisor in the U. S. Forest Service, - R.H.) will report the facts fully to the Bureau of Operation with his recommendation of the type of road to be built."

Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

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THE FORESTER RECEIVES THE DISTINGUISHED SERVICE MEDAL FROM THE WAR DEPARTMENT

One more honor has been received by Colonel Greeley, the War Department on Wednesday, April 26, having conferred upon him the Distinguished Service Medal for exceptionally meritorious and distinguished services during the World War. The medal was bestowed by the Secretary of War in the presence of General Hines, Rear Admiral Fletcher, Lieutenant-Colonel Herbst, Major Maddux, and Mr. Robert F. Brookings, former member of the War Industries Board.

The citation accompanying the bestowal of the Distinguished Service Medal said:

> "William B. Greeley, lieutenant-colonel, Engineer Officers Reserve Corps; then lieutenant-colonel, Corps of Engineers, United States Army. For exceptionally meritorious and distinguished services. In charge of the Forestry section of the Division of Construction in Forestry from June, 1918, to July, 1919, he supervised the operations of all forestry troops in France. He rendered highly important and valuable service to the Government, contributing markedly to the successes of the American Forces in France."

Colonel Greeley, who was with the Forest Engineers from August, 1917, to July, 1919, also has the honor of having been decorated by the French Government with the Legion of Honor and by the British Government with the Distinguished Service Order.

An impromptu reception was held in the Forester's office immediately after the decoration had been conferred, at which members of the Washington office and District 7 expressed to Colonel Greeley their congratulations.

DIVISION OF RESPONSIBILITY (Continued)

By John H. Hatton

(Ogden Grazing Conference)

Looking at our grazing administration, as well as other Service activities, there has been a pretty consistent policy followed, it seems to me, of transferring responsibility to the field. A brief review of the Grazing branch of the Service takes us from almost complete control at Washington from 1905 to 1908, gradually less complete control from 1909 to 1920, to almost as complete jurisdiction by the District offices in 1921.

The question which arises at this time, I think, is whether there should be a still further extension of responsibility, not necessarily to the District offices, but to the Forests. Our Forest Supervisors and Rangers have reached their majority in most of the essential details of the grazing administration, unless there should be rapid and radical changes in present policy; and in the interests of uniformity there should remain the present general supervisory control for a year or two longer, until matters become more stabilized again. However, if the policies can be definitely stated, I think we need not wait to place the responsibility.

Let me present for possible discussion a few concrete suggestions:

1. Secretary's Responsibility

General control of authorizations for five-year or lower periods and authority to permit, regulate, or prohibit grazing on the National Forests.

2. Forester's Responsibility

General supervisory control under the Secretary's authorization. Formation of general policies. Correlation of progressive measures and ideas for the Service as a whole. Establishment of yearlong rates. Handling of civil trespass cases requiring departmental action, and the larger criminal cases. Maintenance of general cooperative relations between the Service and Congressional committees, various departments, bureaus, national livestock associations, etc.

3. District Forester's Responsibility

General control of National Forest grazing and interpretation of established regulations and policy. Approval of changes in authorizations exceeding 10 per cent. Review of Supervisors' management plans and issuance of needed instructions. Maintenance of cooperative relations and direct contact between Districts and local State institutions and Federal representatives of various bureaus. Handling of all innocent and wilful trespass cases in excess of $200.00 except those cases which through failure to secure settlement locally should be referred to the Attorney General. (If possible, procedure should be arranged for referring civil cases and criminal cases up to a certain size direct to the local United States Attorney when advisable.)

4. Supervisor's Responsibility

Handling of applications and issuance of permits. Allotment of range between different classes of stock under approved policies and objectives. Establishment of seasons and rates less than yearlong. Establishment of driveways. Changes in authorizations within 10 per cent. Handling of innocent trespass cases up to $200 under general trespass policy, and small wilful cases involving punitive damages up to $25.00 after reference to the District office. (There are numbers of small wilful cases too small to refer to the courts, and the Supervisor could in a great many cases get prompt settlement if he could go direct to the trespasser and make the demand, backed by the District office.) Approval of special rules with livestock associations which have become standard policy.

5. Ranger's Responsibility

Detailed management and control of grazing under existing regulations and policies. Approval of applications on districts where the grazing business has settled down and there is no need to consider applications from a Forest standpoint by the Supervisor himself. I am not sure whether I wholly concur in this suggestion myself, but I want to present it for purposes of discussion. If our future policy is to stabilize permits, there would be even more argument for the suggestion than under the present regulations. Handling by direct contact of innocent grazing trespass cases up to $50.00 after review or consultation with his Supervisor.

As to the accountability of Forest officers for good management of forage resources, I think that should rest first with the man on the ground. With policies and procedure and progressive ideas now so well outlined and available to the field men, there should be progressive application of these principles and progressive installation of the ideas which studies and practical demonstrations have shown to be desirable. If the Washington and District offices and Studies men fail in getting these things out to the field, then I should say the principal responsibility for lack of progress would rest with these so-called clearing houses. I think, too, the District offices and Washington office should be responsible for seeing that Studies men are assigned to Forests as rapidly as possible where a general program of installation of the more intensive studies details are desirable, and which have not yet become so generally known and recognized. Salting plans, the bedding out system of grazing, proper seasonal control, capacity estimates, etc., need no specialists to put them into effect.

As for carrying on the intimate details of pure administration, I should say the responsibility rests first, under present day conditions and always, with the local officers, and secondly, with the District offices. In criticizing a Forest for lack of accomplishment, however, we must not overlook the unusual demands made by the war, and that readjustments take time. But we must also recognize the war is over, as far as this country is concerned, we hope, and we must not lean indefinitely on this support in making allowances for lack of accomplishment. I think, too, in placing this responsibility for accomplishment with the Forests we must not overlook the fact that certain responsibility rests with the District offices in getting around to the Forests at not too long intervals. Changes in grazing conditions sometimes occur so slowly and imperceptibly from year to year that the man on the ground all the time may not see them, and it requires a check from the outside to get a more accurate picture of what is happening. There is such a thing, too, I think, as an officer getting too familiar with his local conditions. I mean by that, having looked upon certain scenes so often our eyes fail to see and to note what is actually taking place, and it becomes advisable sometimes to furnish spectacles in the form of eyes from the outside, or changes in scene. These tendencies, in my judgment, emphasize the need for more detailed check studies on the ranges which will show concretely and make permanent record of just what is happening from year to year or at stated intervals, instead of depending so much upon general observations and opinions, which often become dulled, so to speak, by a familiarity which breeds contempt - contempt for closer study and observations, and the making of permanent records.

As to range inspections, two weaknesses appear to have developed. First, they are doubtless too superficial, and secondly, there is not a close enough follow-up to see that unsatisfactory conditions are corrected after having been determined by inspection.

The first essential of an effective inspection is the use of an outline, not too cumbersome or mechanical, but one that will keep before the inspecting officer the essentials and which will insure that proper record be made of facts and observations. We have attempted the use of such outlines for several years now, but, as in many other things, familiarity frequently breeds contempt, and the first thing we know we are simply hitting the high spots and recording the things which make their most direct appeal. It frequently requires an interval of several years to get around to a Forest again, and the tendency is to try to see all the Forest in a trip of a couple of weeks, and obviously it is impossible under such a plan to get down to much detail on anything. About all that is accomplished is to call to the attention of the local officer the things that fill your eyes, and encourage him to follow them up and work them out. I am coming more and more to the opinion that the limitations of our field time and the necessity of spreading it out so thin in an attempt to cover every district of a Forest in one brief trip make it advisable to concentrate, say, on one or two districts and take up things in more detail on those particular districts, and make observations and records that may be duplicated and furnished the districts not visited. This will help to show the others what are considered essentials and perhaps point the way to more independent work on the districts not visited. Then the next trip around make but a hurried check survey of the districts previously visited and concentrate on some not cogered intensively on previous trips. I believe we will become more useful supervisory officers if we will follow such a program in the future.

SUCCESS OF FORESTRY DEPENDS ON EDUCATION

By Theo. Shoemaker, D-1

In an editorial under the heading, "Future of Forestry in People's Hands," the AMERICAN LUMBERMAN of April 7 says in part:

"Forestry and reforestation to-day offer a severe test to free government in the United States. Fire protection is said to be 85 per cent of the problem of reforestation of cut-over lands; and fire annually destroys enormous areas of mature timber. The future timber supply, therefore, is largely in the hands of those who cause fires, chiefly that part of the public that does not own either timber or cut-over lands; and this is the part also that complains of the cost of lumber while seeking to place upon timber and cut-over landowners the chief burden of reforestation.

"In a nutshell, protection of the forests from fire is resolved into the problem of protecting the property of timber and cut-over landowners from the depredations of the 'public' or at least that part of the public that causes forest fires. The laws now and always impose a severe penalty for negligent and malicious setting of fires. No new laws are needed; the requisite is a new recognition of the rights of property, a more enlightened American citizenship.

"The problem of reforestation, therefore, practically stated, is to teach the people what every good citizen is already presumed to know. A great deal might be said about this deplorable situation, especially in view of the fact that it is not peculiar to the forestry problem. A great deal has been said about laxity of law enforcement; more should be said about law observance. Certainly, the people can hardly complain of the delay in reforestation so long as the fires they themselves cause are the most potent factor in destroying trees and preventing regrowth.

"Public sentiment with respect to reforestation is steadily changing for the better; owners of cut-over land find their best resource, not in stringent laws necessarily, but in the simple expedient of showing the public its vital interest in fire protection and perpetuating the timber supply."

It would be hard to state the situation more clearly, or to give a better basis for the emphasis the Service is now giving to the task of educating the general public. It is not enough to teach fire prevention alone. A knowledge of forests and what they mean to human welfare must become ingrained in the minds of the mass of the American people. It must be made a part of our elementary education, starting not with the first year in school, but in the home and in the kindergarten, and continuing through all of life. It must find its place in our literature and in our schools, beginning with the simplest of bedtime stories and running through the text books on nature study, civics, economics, geography, and history, and on beyond the schools into the short stories, fiction, and serious writings of our best authors. It needs to be taught in all these ways, and to be sung in poetry and fable until it becomes a part of the whole moral and mental fiber of the nation. Not until then will we have the support that will enable us to do with the forests what our permanent prosperity requires.

WASHINGTON NOTES

Mr. Raphael Zon of the Washington office has been unanimously elected to succeed the late Dr. Fernow of Toronto as Editor in Chief of the JOURNAL OF FORESTRY, the organ of the Society of American Foresters. Mr. Zon has been acting in the capacity of managing Editor since 1917, when the Forestry Quarterly and Proceedings of the Society of American Foresters were consolidated into the JOURNAL OF FORESTRY.

"A Horse! A Horse! My Kingdom for a Horse": In his annual report, the Supervisor of one of District Two's Forests makes the following comment on the question of range inspections:

> "The Rangers have all been required to use horses this year and cover their range allotments on horseback. This practice will be continued in the future."

The Ford, however, will be useful in getting into town to the movies Saturday nights.--Ed.

FOREST PRODUCTS LABORATORY

Seasoning Wood by Electricity: Seasoning wood by passing mild electric currents through it seems to be used in some places abroad. It is claimed that by one of these processes wood not only rapidly loses moisture but acquires remarkable tenacity and is not subject to rot. A little experimental work upon electrical seasoning done at the Laboratory indicates that claims made for these various processes are in general much overdrawn. Experience shows that there is no justification in expecting better results than with kiln drying methods, and it seems certain that the cost of electrical processes would necessarily be much greater than kiln drying.

Correspondence in Wood Pulp Manufacture: "Going to school has been one of the brightest spots of my life this winter. It has brought out one thing very clearly to my mind. A may may be well up in his work from the practical point of view, but he must dabble in the theory just enough to get started. Then he gets interested, then he wants more of it, and shortly he realizes that there is more to his work than he ever dreamed of as just a practical paper man."

That is what one of the 84 correspondence-school students wrote concerning the course in manufacture of wood pulp that is being given at the Laboratory in cooperation with the University of Wisconsin.

The 84 men enrolled include superintendents, chemists, oilers, and 27 other varieties of employment in pulp manufacture showing that in this trade, just as in the Forest Service, there are men occupying advanced as well as subordinate positions who realize the need for technical knowledge of their work.

The popularity of the courses and the stick-to-it-ness of the students is indicated by the fact that fewer than 5 per cent of those enrolled have dropped out, and by the high grades received. Of 534 papers graded, only 18, or a little over 3 per cent, have fallen below the passing mark and had to be rewritten. High grades of 93 to 100 were received by over half of the students.

New enrollments are approximately 8 a month, although very little effort has been made to get publicity for the courses. Indications are that these courses will grow in popularity.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Increased Timber Business in Wyoming: The proposed North & South Railroad in Wyoming, which, according to report, is to be built at an early date by the Haskell interests, will be of a great deal of importance in connection with the timber business on the Bighorn Forest. This railroad will extend from Casper, Wyoming, to Miles City, Montana, a distance of 320 miles.

An operator who is just starting in on the Bighorn under a small sale of approximately 60,000 hewed railroad ties and a small amount of sawlogs, has recently entered into a contract calling for delivery of 250,000 ties to this new railroad by November 15, 1923. Approximately 1,000,000 ties will be required for this railroad, so a thriving timber business on the Bighorn Forest is anticipated.

The demand for railroad ties elsewhere in the District seems to continue strong. A sale of 560,000 hewed railroad ties and 5,500,000 feet of sawlogs was recently made the Wyoming Timber Company within the Muddy Creek unit on the Medicine Bow Forest; rates of 13½¢ for hewed railroad ties and 50¢ per thousand feet for sawlogs.

Assistant Forester Herbert Smith spent the week of April 16-21 in D-2 going over the working plans and general public Relations work with the local office. Mr. Smith addressed the District office meeting on Friday, April 20.

Colorado Legislature Passes License Law: As a climax to the cattle and sheep trouble which has existed in the public domain of northwestern Colorado for some time, the Colorado legislature, just closed, passed a license law to be administered by the County Commissioners, which provides for a tax not to exceed 5¢ per head on sheep and 20¢ per head on cattle coming within the State from other States to graze or cross the public lands. This is going to introduce a lot of difficulties in connection with the use of Forest ranges, where most of the demand in the past has come from Utah, Wyoming, and other States, and where preference has been established by long periods of use. It is conceivable, where the Board of County Commissioners consists of cattle men, that the entrance of outside sheep might be prohibited altogether under this act. Wyoming has for some time had a similar act where a charge of 3¢ per head is made on sheep for the purpose of inspection and sanitation, but it is not considered a license as in the Colorado law.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Secretary's Visit: Secretary of Agriculture Wallace and his Administrative Assistant, Mr. Jump, arrived in Albuquerque from the West the morning of April 18 in the course of a five weeks' trip in the Southwest. Mr. Wallace made a brief inspection of the District office. In a few minutes in each branch he caught the high lights of the kind and class of work that is being done. Shortly after nine o'clock a Department meeting was held in the Chamber of Commerce. Employees from all the bureaus represented in Albuquerque were present and listened to an address by the Secretary and to remarks by Mr. Jump. At ten o'clock the Secretary took part in a meeting of Southwestern stockmen and bankers. He lunched with the Kiwanis and Rotary Clubs at noon and spoke before those organizations which met together for the occasion. During the afternoon a trip was made down the valley to the Indian Pueblo of Isleta, in order that the Secretary might glimpse on the way the agricultural possibilities of the Rio Grande Valley. The Secretary left by auto in the late afternoon for Santa Fe, where he spent one day, and then resumed his journey eastward. Members of the Department who met Mr. Wallace are impressed that not only is he a capable Cabinet officer, but he is intensely concerned in the work of every bureau and office in his Department, including the well-being of each employee.

Fire Hazard at Zero: We think of a forest without fire hazard as a sort of paradise, don't we? Well, such are Brazilian forests. There is never any pronounced dry season and fires will not burn in the virgin forests. On the other hand, there are the snakes and the insects which make working in these forests at least interesting. The latter are especially bad in the tropical hardwood forests, where at certain seasons of the year it is almost impossible to work. There are mosquitos and gnats, stinging flies and many varieties of ants all looking for prey and they make life miserable for one. The forests themselves are a tangled mass of trees, vines, creepers, etc., etc., which one can penetrate only with difficulty. And withall it's mighty hot. No, one can not say that it's the best place on earth to work, even if there are no fires.--J.C.K.

Ten Years of Change: Roster of D-3 Supervisors during the last ten years indicates turnover and opportunities for advancement that one decade brings in forest organization. Ten years ago, of the present Supervisors, one was still in Forest School; one was a temporary forest guard; four were rangers; two were forest assistants; one was in charge of a land classification party, and one was a deputy. Only three were Supervisors.

DISTRICT 3 (Concluded)

Who Can Say?: Billie Shannon writes in from the Fort Bayard nursery and raises a question: "It is noted that in the American Forestry Magazine's story contest the Ranger is limited to 1,200 words, while his wife is allowed 2,500. Is this a tacit acknowledgment that the female of the species is more loquacious than the male?"

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Shelter Belts on Denver & Rio Grande: The Denver and Rio Grande Railroad has been experiencing much difficulty with snow in the high passes of Colorado and also in the vicinity of Soldier Summit, Utah. It is their desire to plant trees along both sides of their right of way to form a shelter belt and to protect their tracks from immense snowdrifts.

Last week, Deputy Supervisor Van Boskirk of the Manti Forest and Supervisor Blakeslee of the Uinta Forest, met with officials of the D. & R. G. W. Railroad at Soldier Summit to discuss plans for planting timber along the right of way between Soldier Summit and Colton. This stretch is in a brushy country, covered naturally with oak brush, sagebrush and similar growth. Rainfall is especially low, considering the elevation, and it promises to be a problem indeed to find any native and foreign species that will grow thriftily enough in that situation to do any good.

Atta Boy! "I am repairing telephone line and fences stormy days, painting outside of house fair days, and I am telling you, together with the above work and getting ready for Forest Protection Week nights, I am awfully rushed. Then besides I am very nervous over the latter work; as you know, I am not much for school teachers, but I have taken up Forest Protection Week with one who began by saying she has a girl friend who had a friend who married a Forest Ranger whom she met during a campaign of this sort."--Humboldt.

More Timber Sales: Application has been received for approximately ten million feet of timber, mostly western yellow pine, in the Goose Creek Chance on the Idaho Forest. The Supervisor will insist that overmature inferior species, such as white fir, be removed. If the purchaser does not care for this class of material, no sale will be made.

The Scenic Resources of Utah: Assistant District Forester R. E. Gery has been compiling a general report on the scenic and recreational advantages of Utah for a long time, and has collected a remarkable set of photographs of Utah scenery. A copy of his finished report fell into the hands of the editor of the Utah Pay Roll Builder, a small local magazine. They are very enthusiastic about Mr. Gery's work and wish to publish it as a serial in their magazine.

A Spring Visit to the Kaibab Forest: Forest Examiner S. B. Locke, in company with Mr. E. A. Goldman of the Biological Survey, made an early spring trip to the Kaibab National Forest in the latter part of March in order to inspect the winter deer range. They were also accompanied by Supervisor McPheters and Scott Dunham, a celebrated lion hunter. They took a drive around the edge of the Forest and found conditions very satisfactory in most places. The shrubby species upon which the deer feed are very persistent and stand the cropping very well. The intensive use of some of this range is shown by a number of juniper trees which have been trimmed by the deer as high as they could reach. The party also made a trip to Thunder River, which springs out of the side of the Grand Canyon and flows a few miles to reach the main Colorado River. Several thousand trout eggs were planted in this river which previously has been without fish. Peculiar ecological conditions were found along this stream, the upper part of which is a succession of cataracts. Such peculiar species as barrel cactus and maidenhair fern were found within a few feet of each other.

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A people without children would face a hopeless future; a country without trees is almost as hopeless. Forests which are so used that they can not renew themselves will soon vanish, and with them their benefits. A true forest is not merely a storehouse full of wood, but, as it were, a factory of wood, and at the same time a reservoir of water. When you help to preserve our forests or to plant new ones, you are acting the part of good citizens.--THEODORE ROOSEVELT.

Not Common in That Country: A game enthusiast and strong supporter of conservation took an auto trip to Michigan. En route the party stopped at a popular fishing and camping ground. The little daughter tried her luck at fish and not having much luck entreated her father to teach her the art. He, proud of the confidence bestowed, took the pole and line and in a very short time landed two nice trout.

About this time a rather officious looking person addressed the father thusly: "Have you a license for this county?" The father, somewhat embarrassed, assured him that he had and began to fumble in his pockets for it. The officer had noticed the sticker on the windshield of the car, "Put Out Keep Out Forest Fires." He said, "Are you the driver of that Forest Service car there?" "Yes," said father, "and that other gentleman is with me and I am sure he has a license, too." "That's all right, then," said the officer, and walked away.

"Father" writes that he is very grateful for that sticker and also that he will never be caught fishing in another man's country without a license.--G.E.M.

The Supervisor of the Siskiyou says: "In January, there were six of us in the office writing reports, and we got 'em wrote, the whole 28 or so of them. There are only a few stragglers left to round up now. The property is mostly showing up - there are a few mysterious disappearances, as usual, but it's turning out better than we thought it would. The Kerby-Page Creek telephone line is beginning to look like a telephone line, in spite of the bad weather. It may be of interest to know that ten to fourteen 4½-foot holes make a darned good day's work for a very energetic man."

Another Rat Catcher: There have been several valuable formulae and handy devices, such as paint remover, chemicals to produce various colored flames, and rat catching devices described in the Bulletin.

I would like to see a special column or space for just such things and a bid made for ideas from the field.

The rat-catching device made me think of a mouse and rat catcher that I have made use of quite often. There may be some who have not heard of it. Take a large vessel, such as a water pail, crock, or milk can; partly fill with water or other cheap fluid; tie a sheet of fairly heavy paper over the top like the head of a drum. Then slit the paper in the middle with two cross slits in the form of an X and suspend a piece of cheese, an ice cream cone, or other handy article of food a few inches above the slit paper. Then lock up the remaining food in the cabin, go to bed, and if you are not too sleepy, listen for the splash.--F.W.C.

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MINING CLAIMS VS. TIMBER SALES

By M. W. Thompson, D-2

The recent decision of the Circuit Court of Appeals, by which the decree of the District Court of South Dakota was reversed in the United States vs. Frank Sherman case, should be of interest to Forest officers administering timber sales - particularly sales in which difficulties have been encountered on account of mining claims (assuming that the Black Hills region is not the only one in which so-called mining claims have seriously interfered with timber operations).

In June, 1918, a sale of approximately a million feet of timber was advertised and awarded within the Black Hills National Forest. The sale had not progressed very far when a mining claimant informed the local Forest officers that he had two valid lode claims within the sale area, located about sixteen years previously, though there was no evidence on the ground of the location of the claims or that assessment work had been done. The claimant objected to the cutting of timber on the claims, but would not definitely indicate where the corners were supposed to be and, as a matter of fact, claimed several times as much acreage as he was entitled to hold under two claims.

Suit was brought to secure an injunction restraining the claimant from interfering with the cutting of timber on the claims, and a decision unfavorable to the United States was rendered by the District Judge, who, it is understood, is on rather friendly terms with the mining locator.

The primary reason for the decision apparently was the fact that the claimant was a man of the Hills, wasn't supposed to be a surveyor and competent to locate claims accurately, though, as a matter of fact, he had attended the School of Mines at Rapid City, S. Dak. He alleged the discovery of mineral, the filing of location certificates, annual assessment work done, and the law complied with in every respect, and received a favorable decision in the lower court.

The Circuit Court of Appeals reversed the District Court. This action was taken largely on the basis that the claims were not distinctly marked on the ground so that the boundaries could be readily traced, and the location certificates did not describe the claims so that they could be located with reasonable certainty. It is brought out that possession comes only through valid location, and if there is no location there can be no possession under it.

The evidence showed that the claimant had indicated to Forest officers in a general way about where original stakes were supposed to have been driven, or blazed trees that were supposed to have been the original corners.

The South Dakota statutes provide that surface boundaries shall be marked by eight substantial posts, blazed, marked and sunk in the ground at each corner and at center of end or side line. The evidence showed no pretense to comply with the law in this respect, and the descriptions contained in the location notices were not such as to identify the claims with reasonable certainty. These features, as well as the fact that there had never been any actual discovery on one of the claims, resulted in the favorable decision in the Circuit Court of Appeals.

MINING CLAIMS VS. TIMBER SALES (Concluded)

It should be encouraging to local Forest officers, who have had so much difficulty in this case and in a number of similar cases, to learn that the Forest Service has taken the right stand and has been finally granted a favorable decision. Everything possible has been done to secure a decision with as little delay as possible, and it is unfortunate that the operations of the purchaser have been delayed for several years and that he has been put to additional expense on that account. Such a decision should have a beneficial effect on other similar "hold-up" mining claimants.

A QUESTION

In his recent article on the consistency of our timber sale policy, Mr. Bates askes, "How can the Government reduce the present rate of cutting and consumption?"

This question brings to mind another. Is it incumbent upon the United States, in the face of an almost certain "gap" as indicated by the Capper report, to furnish timber to foreign countries? From the standpoint of the internationalist, perhaps it is. Conversely, from the standpoint of the nationalist, which is the view held by the majority, it probably is not. It would be interesting to know what effect, if any appreciable one, the exportation of lumber is having upon our timber supply. This phase of the situation seems to have been given little consideration. Will not some one who has the necessary data at hand enlighten us?--Robert L. Campbell, D-6.

AND AN ANSWER

Supervisor Campbell has raised a question which weeks of research and debate could not settle definitely, because it involves many other things than mathematics.

The records show that in the 10 years previous to 1922 the average exports of lumber were 1,516 million feet per year. In the same period the imports averaged 1,088 million feet. The excess of exports is therefore 428 million feet, which is 1.2 per cent of the average cut for the period.

Supposing it possible in times of peace to establish an embargo against exports, the results might be very unfavorable to the United States. It is not improbable that some of the lumber exported is used in American enterprise in foreign lands. The counter-embargoes which our action might invite would prove exceedingly embarrassing to our manufacturers of automobiles, airplanes, boats, cameras, caskets, cigar boxes, clocks, cutlery, firearms, furniture, interior finish, musical instruments, paper, picture frames, scientific instruments, and show cases.

The total value of exports in 1920 (wood and manufactures of wood) was $186,000,000, whereas the value of the imports was $208,000,000. The balance of trade is against us both in quantity and value. Nevertheless, for a difference of $22,000,000 we can not afford to deny ourselves the necessities and luxuries listed above made of the most suitable materials. We get that amount of satisfaction out of the things we import. The balance in value would not be against us if it were not for the heavy imports of pulpwood, which we do not export.

The bulk of both exports and imports in lumber is not luxury woods. It is a fair exchange of the work-a-day materials of the world at points where such exchange is favorable to both parties. We get back in imports over 70 per cent of the amount of lumber we export.

If we were in the position of Canada with her pulpwood - all going out and none coming in - the situation would perhaps warrant drastic measures for the national welfare.

But 1.2 per cent of the cut is a negligible quantity, even in this time of increasing need, if to retain it we would be compelled to do things which would seriously affect the business world and perhaps lower our living standards. A slight improvement in prevention of wood waste would be a far more logical means of saving 428 million feet annually than any attempt to choke or divert the natural flow of commerce.--R. V. Reynolds, Washington.

FOREST FIRE

Prometheus' gift, at Satan's call,
From harmless glow flame-tongued you crawl
Up mountainside and o'er its crest,
Destroying all with cruel zest.
You gorge on leaves and underbrush
And blast the trees as on you rush.

Your venom breath disrobes their green
To towering spires and snags that lean
As flaming brands of spiteful hate
And mark the scene you devastate,-
While hot winds shriek in wild delight
And urge you on to meaner spite.

With frenzied fear all wild life flees
To distant groups of shelt'ring trees
Beneath the pall against the sky;
And parching beds of streams go dry
As on you roar with fearsome speed
To consummate your fiendish deed.

Proud kings that reigned a thousand years
Rest lifeless now on blackened biers;
They smolder on - just burning wood
That smokes, and glows, and serves no good,
Till low'ring veil of weeping cloud
From rev'rent Heaven spreads a shroud.

--W.J.M.

SCIENCE REPLACES RULES OF THUMB IN NURSERY PRACTICE

By W. G. Wahlenberg, Priest River Exp. Station

One of the old rules of thumb in nursery work prescribes that seed should be sown at a depth of two to four times the thickness of the seed. Although such rules have their value, they must give place in time to the more exact knowledge resulting from research.

At Savenac Nursery many of the irregularities in seed germination have been traced directly to sand cover of uneven depth. Fail spots under thick covering have been found to be due to starvation. The seeds may germinate and can live as long as the starchy food supply stored around the embryo lasts. When it is used up the seedling must have green parts in the light above the soil, or die of starvation. Thus, sowing must not be too deep. On the other hand, very shallow covering is not good because of the danger of frost heaving the seeds out.

Only experiments can determine the best depth of cover to use. Careful work has been done on this subject at Savenac and, on the basis of this, western white pine seeds are now sown under 5/8 inch of sand and western yellow pine under 5/16 inch. These results may not be the final word in depth of cover, but their use has been responsible for great increases in germinative capacity and have shown the importance of uniform depths of cover.

Those who have in mind the old rules of thumb will be surprised to see that we are using a deeper cover for white pine seeds than for the larger yellow pine seeds. Time of sowing is the influential factor here. When the sowing was done in the spring, 1/4 inch was a suitable depth for white pine, but when fall sowing was decided upon it would not do. In order to guard against the increased exposure to frost heaving, a cover of 5/8 inch was needed. Experiments in fall sowings showed that where 1/4 inch cover was used the germination amounted to only one-fifth of that where 5/8 inch cover was used. Under 1/4 inch cover a very large quantity of seed was heaved out as against none under the 5/8 inch cover. When seed is worth five or six dollars a pound, such an occurrence is not a trifling matter.

ALL SIGNS FAIL - SOMETIMES

By Frank A. Waugh

Recent observations in several widely separated sections of the National Forests lead one to believe that a word of caution ought to be uttered against indiscriminate signing. Certainly no Supervisor wants his Forest to look like a billboarder's paradise. Yet it is true, theoretically at least, that any district may have too many signs.

It ought to be clear that any needless sign should be taken down. Indeed, it ought never to be nailed up. Signs are not set in the National Forests for ornamental purposes, nor even for advertising. Every sign is more or less of an impertinence and detracts somewhat from the wildness, the remoteness and the good forest feeling which we all prize.

Forest signs are clearly of two classes: first, those which give information; second, those of an admonitory character. Signs of the former class are seldom objectionable. Indeed, if they give real information of any sort, they are almost certainly desirable, though such information need not be repeated. Signs telling distances, directions, giving elevations, pointing out views, naming places, etc., are to be strongly encouraged. Probably more signs of this class could be placed to advantage in every forest.

But there is a limit to admonition, and a point, rather soon reached, beyond which it stales and does more harm than good. There are some forest trails where the same warning is repeated every mile. But by the time a man has ridden 20 miles in a Lizzie and has been 20 times importuned with the inquiry, "Did you Extinguish your Cigarette?" he begins to look for something to burn. Or after he has been exhorted 20 times, "Be a Sport - Put out your Camp Fire," he decides that he should worry, seeing some one else is doing the worrying for him.

The best test of a sign is, does it carry information, genuine, true and useful? If it does not, the presumption is against it.

ENGLISH ENLISTS IN THE UNITED STATES ARMY

War Department,
Washington.

Composition in correspondence and publications.--A review of communications and orders issued from various War Department agencies, as well as correspondence received from the service at large and literature distributed by the general and special service schools, shows that a high standard of excellence in composition is rarely attained.

Correspondence is as definitely an index to character as either verbal expression or conduct, and correct usage requires constant effort in the choice of words, the construction of sentences and the arrangement of paragraphs.

Words used to express an idea should be carefully selected and so employed as to convey clearly and forcefully the exact meaning intended and no other. Sentences should be logically arranged in such sequence that the development of thought may be easily followed and the salient points readily recognized.

Brevity and conciseness, while desirable, should not be sought at the expense of a clear, accurate and agreeable style, nor of the personal touch so often lacking in correspondence with the public.

These instructions are intended as a caution to individual officers to the end that each may discover his own deficiencies in composition and, by taking corrective measures where necessary, help to raise the standard of the entire Army in this important respect.

By Order of the Secretary of War:
JOHN J. PERSHING,
General of the Armies,
Chief of Staff.

OBSERVER P. F. MAXWELL GIVES LIFE TO SCIENCE

It is probable that everyone in the Service knows by this time of the streamflow experiment at Wagon Wheel Gap, Colorado, which has been conducted cooperatively by the Weather Bureau and the Forest Service since 1910; knows, perhaps, that not a day in these thirteen years has passed without the taking of elaborate observations on the weather and the streamflow; that since 1916 the Weather Bureau has furnished all of the trained men for these observations, the Service participating in the experiment only in administrative matters. During the early spring months a complete survey is made of each of the two watersheds, every five days, to determine the amount of snow on the ground and its rate of melting.

It was in the regular line of duty, while snowshoeing over the watershed denuded in 1919, that on March 5, 1923, Observer P. F. Maxwell was caught in a snowslide which cost him his life, and removed from the ranks of scientific workers a faithful student. Apparently Maxwell's movement across a broad easterly slope at the head of the basin had started the snow in motion, and being in the midst of the moving mass he was utterly helpless. He was carried about 1,500 feet to a point where the snow piled in the bottom of the stream channel. Fortunately for his family and coworkers, the body was recovered without difficulty a few hours later and has been properly laid to rest. Mr. Maxwell had been in the service of the Weather Bureau for seven years, and had been a highly valued assistant in the work at Wagon Wheel Gap for 18 months, coming to the station from New Haven. He leaves a wife and two children, who have returned to relatives at Auburn, Massachusetts.--C.G.B.

WASHINGTON NOTES

Two Hundred Firemen of the Montgomery County Association of Volunteer Firemen in a recent session at Kensington, Md., unanimously pledged their support to State Forester Besley in the prevention and suppression of forest fires in southern Montgomery County, and will hold themselves in readiness to respond to any calls that may be made on them to fight forest fires.

It is rumored that "Shorty" Kelleter, Mayor of Kensington, was instrumental in bringing this to pass.

Ward Shepard has returned from a trip in the field and to the Madison Laboratory.

Forest Protection Pageant: The recent nation-wide observance of Forest Protection Week developed no more unique form of presentation than the impromptu pageant enacted by one of the Washington graded schools. This pageant was written and arranged by the teacher at odd moments, starred and directed by the eighth grade, rehearsed only twice, costumed simply and inexpensively, and staged in the school hallway for lack of an auditorium. The reading of the President's proclamation, an original speech on Forest Protection, and two recitations - one an original poem - worked up the proper degree of enthusiasm. Since trees can not walk into place with any degree of tree dignity, the makeshift of closing eyes instead of drawing stage curtains was resorted to for scene shifting with perfect success. A sylvan grove, spread out before the opening eyes, was soon enlivened by fluttering butterflies, bright-hued birds, and care-free children. One of the latter interrupted the peace of the scene by dropping a lighted match to the forest floor. Troublesome flames appeared, frightened away the joy-loving creatures, and ran riot for a while among the helpless trees, until forest rangers came to the rescue and drove out the intruders. The penitent cause of it all wandered again into the forest he had so nearly ruined, and, falling asleep, dreamed that a wise old owl read to him the message written in great letters across the outstretched green branches -

PROTECT THE TREES

This pageant is to be repeated with larger numbers of participants in a park near the school.--D.S.E.

FOREST PRODUCTS LABORATORY

No Practical Method of Softening Wood: "How can I soften this wood to make it more workable," is an inquiry often received. So far as can be learned, there is not available any really satisfactory means of softening wood without destroying its texture. While wood can be pulped through chemical treatments, it is not practical to modify these processes to give milder action. Apparently it has become common practice, especially in the case of California incense cedar, to impregnate the slat with paraffin or some similar material. The action of this is more in the nature of a lubricant, and the resultant increase in the case of whittling is quite noticeable.

Have you Worn Out Your Share of Chairs? While studies of diaries of Forest officers show that they have little time for wearing out chairs, this evidently is not true of the rest of the 110,000,000 people in this country who annually require over 2,000,000 dozen of new chairs, according to figures in a recent laboratory report.

This report, which is on the chair industry, is the result of a study that it is expected will later be carried on in other industries using small sized lumber. Forest Service investigations made show that but 30 per cent of the wood in the original forest is represented by seasoned, unplaned lumber, the product of the sawmill. In other words, for every 300 board feet of lumber manufactured, 700 feet are lost or wasted in the woods in the form of logs, or at the sawmill in the form of heavy slabs and edgings, long trimmings, and low and "off" grades of lumber.

The extent of this waste in the chair industry alone is very great, as there is a further estimated loss of 40 per cent in cutting up the 320,000,000 board feet that are used in furnishing material for chair parts, of which there are twenty-six hundred sizes of small dimensions in standard types alone. A large part of this loss can be prevented if the chair industry will buy its raw material in the form of dimension stock rather than as commercial grades of lumber.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Laramie Citizens Insist on Boosting Forest Protection Week: The Forest officers of the Medicine Bow Forest arranged for an exhibit of equipment used in fire prevention work in one of the local stores, as well as one of forest products. Three additional merchants felt slighted, however, and called the office, asking if they, too, could not have materials. The supply of suitable material was short, although they were given something.

All stores, garages and other business houses were given the red signs to which a Forest Protection Week legend had been attached. One prominent merchant thought he had been overlooked and asked that he be given signs, although they were then in his windows, but he had only noticed them in others. The merchant who had the exhibit of forest products called up and wanted a legend to use showing that his firm was back of forest protection week which he desired to use in his advertisement in the two daily papers. He was given this and in addition directed the public's attention to this exhibit. Following this lead, 18 or 20 of the large business houses added legends to their advertisements, indicating that the firm was backing the Forest Protection movement.

Severe Drought Injures Nebraska Jack Pine Plantations: The past two years in western Nebraska and Kansas have been marked by severe drought. At Halsey, there was a deficit in precipitation of about 6 inches during each of the past two years, and 1922 was marked by high winds so that the evaporation, as recorded at Halsey, was greater than the precipitation. This winter was marked by a lack of snow and high winds, with the result that severe losses are showing up in some of the older jack pine plantations. This is particularly noticeable on southern exposures, where occasionally all trees in patches of approximately 100 feet in diameter, or more, have died. It is more noticeable in the open stands of jack pine than in dense stands, and this is due to the fact that jack pine is a shallow rooted species, lateral roots going out from the relatively small taproot in every direction from 6 to 12 inches below the surface. As a result, the vegetation quickly absorbed the small amount of precipitation that fell during the year and the jack pine suffered.

This is particularly discouraging in view of the fact that since the successful Bruner plantation was established in Holt County, Nebraska, in 1891 by the Federal Forest Service, this species has been loudly acclaimed by the Service and other organizations as one of the most desirable for western Nebraska. After 32 years, it is found to be unsuited to the most severe droughts which periodically occur in the western plains. Supervisor Higgins received a request for assistance from one of the owners of the Bruner Ranch, stating that severe losses were occurring in this much quoted jack pine plantation.

There is some encouragement to be found in the fact that western yellow pine, the species which has been planted most at Halsey, has suffered very little from this severe drought. A picture was taken recently of a yellow pine 3 feet in height, dug up in a road construction job, in the Halsey plantation, which had a taproot 3 feet long at the point where it was broken off. Scotch and Austrian pine are also able to withstand severe droughts, and one small Scotch pine was found which had a taproot 5 feet in length. Scotch pine has not been very much in favor at Halsey recently because some of the southern European seed was used instead of the better growing and more vigorous northern European or Riga variety. Locally collected Scotch pine seed and that known to be the genuine Riga variety are now being sowed in limited quantities. Austrian pine is very slow growing at first and has a poor survival, except on northern exposures, and it is not susceptible to the attack of the pine tip moth which has retarded the growth of other species.

A Rangers' Training School will be conducted on the Pike Forest with headquarters at Monument Nursery for six weeks, beginning May 1, in charge of Peter Keplinger, Forest Examiner, of the District office. By this method the new men will have an opportunity to gain some practical experience before their permanent assignments.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Use of the Shield in Publicity: Rangers and other Forest officers say auto owners often object to the windshield stickers because the stickers, except for the camp fire warning, are just like the enameled shield markers that adorn Government-owned or authorized cars. One autoist told a District Office man last fall that he didn't want that thing on his machine because he would feel like he was driving a Government car, and others have said practically the same thing. In D-3 the windshield sticker has been somewhat of a drug on the market generally for this very reason. Ranger Chipman of the Crook has just asked his Supervisor the question, "Is the windshield sticker a good thing for advertising fire prevention?" Mr. Chipman also reports that he heard last year of a man who secured a "Help Prevent Forest Fires" button and passed himself as a ranger among native Mexican people.

Folks and Fires: With the approach of the spring fire season, the perennial question of "campers' fires" will again come up. It has been the general theory that the more campers, the more fires will occur. This is not always the case. The per cent of fires with reference to human use usually increases up to a certain point and then very rapidly decreases. Otherwise, there would be no Forests at all near large centers of population like New York, Philadelphia, and parts of New England, or in European countries, where the population is extremely dense. Where the use of a forest by recreationists and others increases beyond a certain point, their care with fire increases, and the same attitude of mind concerning fires exists as in towns or city parks. The city parks are the most used spots to be found anywhere, yet fires are very rare, although there is a great deal of trash and combustible material found in them. This is because it is everybody's recognized duty to put out such fires. A similar attitude will in time be created on the portions of National Forests where human use is extensive. Public sentiment in such localities will not permit a fire to do much damage, but will immediately take steps to put it out. The transition of fire risk from high to low exists somewhere beyond the pioneering stage of little use and the point of much use by large numbers. This gap can be greatly narrowed by proper education.

DISTRICT 3 (Concluded)

Army Used Cactus Poles, Too: The first telegraph line connecting Arizona with the outside world was the military telegraph from San Diego, California, to Tucson by way of Ft. Yuma - 540 miles - and the sum allotted for the work was less than $100 per mile. This, even in those days, was very inadequate, and in places only seventeen poles per mile were used. The original builders were not stumped by the problem, for they made good use of the giant cactus and mesquite which grew along the route to hold up the line, thereby establishing a precedent for later Forest Service lines that were built under similar difficulties.

Father of Mrs. Don P. Johnston Dead: A recent issue of the Naval Stores Review reports the death of Mr. W. C. Powell, veteran naval stores operator, of the South. Mr. Powell was the father of Mrs. Don P. Johnston, who is known to many D-3 people. Mr. Johnston was for several years part of the D-3 organization, having been Supervisor on three different Forests, the Gila, the Coronado, and the Santa Fe, and Chief of Operation in the District office.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

New Game Policy in Idaho: Governor Moore has announced a new game policy in Idaho which will involve the reduction of field forces while at the same time there will be a greater expenditure on permanent improvements. It is expected that forty to fifty thousand dollars will be spent on hatcheries and similar improvements in the next two years. It is the belief of the game department that with the cooperation and active aid of the numerous rod and gun clubs in Idaho they can get along with fewer wardens without any increase in game law violations.

Timber Sales: The Union Pacific system, through their representative, Samuel C. Lancaster, Park Engineer, has purchased 190,000 feet of green yellow pine sawtimber to be used in the construction of a hotel at Bryce Canyon.

Mr. H. M. Stevenson, President of the Yellowstone Tie and Timber Company, which now has a sixty million foot sale on the Madison Forest in District 1, recently visited this office. He is looking for a location in lodgepole pine where he can get out framed mine timbers. It is his intention to put in a $15,000 timber framing machine wherever he can find the best opportunity. As soon as the snow leaves, he will go over the Provo River timber to see whether it suits his needs.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Long-Lived: It is reported that western red cedar ties have been in place on the Nelson branch of the Great Northern Railway for 32 years. These ties were not treated.

The average life of a hewed crosstie, Douglas fir or larch, untreated, from inquiries made of the Great Northern Railway, is from 7 to 12 years.

Addresses: Supervisor Macduff recently delivered on April 2 what the press reported as a very fine address before the Association of Commercial Secretaries at the University of Oregon. W. H. Gibbons of Products also delivered a thought-provoking paper at the same meeting. It appears this particular meeting was a forestry one, Mr. George Cornwall of the "Timberman," W. D. B. Dodson of the Oregon Chamber of Commerce, and President Campbell of the University of Oregon, all speaking on phases of forestry and the lumber industry.

PR by Radio: Supervisor Brown of the Fremont has made arrangements with the local broadcasting station to send out any messages that may be desirable, and for his own benefit has secured a receiving set which he expedts to take with him when traveling in the remote parts of the Forest away from the telephone line, with which he will be able to receive messages by special previous appointment as to the hour.

Service Bulletin
U. S. FOREST SERVICE
(Contents Confidential)

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SOME BATTING AND FIELDING AVERAGES IN TIMBER SALES

By Harry Irion, Washington

Fifteen of the 146 Forests cut under commercial sales during the calendar year 1922 almost one-half billion feet of timber, or 57.8 per cent of the total commercial cut for all Forests. Rather commendable stick work for this select group, the average being almost 30 million feet per Forest. The Lasson, with a cut of 51,782 M feet, leads the field by a margin of almost 3 million feet.

During the fiscal year 1922, (calendar year figures not available), the receipts from timber sales and settlement on the fifteen leading Forests aggregated slightly over $1,000,000, or 57.1 per cent of all timber receipts. In fielding the good old coin of the realm the Coeur d'Alene, with a total of $154,957, leads by a neat margin of $56,637. (Would it not be more appropriate to call this Forest the Coeur du Tresor?) The group average is $67,922. If the 146 Forests averaged this amount, the receipts from timber would amount to slightly less than $10,000,000 per annum. Speculation of that sort is, however, outside of the scope of this statement, which has only to do with actual performance.

Two Forests, the Shasta and Siskiyou, are among the fifteen leaders in timber cut, but they did not gather in quite enough iron men to make the receipts group. On the other hand, the Medicine Bow and Santiam are among the fifteen leaders in receipts, but were crowded out of the cut group.

The cut and receipts for each of the fifteen Forests in question are as follows:

Dist.	Forest	Timber cut under commercial sales calendar year, 1922. M bd. ft.	Dist.	Forest	Receipts from timber sales and settlement Fiscal year 1922
5	Lassen	51,782	1	Coeur d'Alene	$ 154,957
1	Coeur d'Alene	48,916	6	Whitman	98,320
6	Whitman	43,820	5	Lasson	96,415
5	Stanislaus	41,262	1	Kaniksu	92,997
5	Plumas	40,001	5	Stanislaus	90,896
5	Shasta	37,601	5	Plumas	80,115
3	Coconino	35,845	6	Crater	60,710
6	Olympic	31,146	1	Kootenai	49,306
6	Siskiyou	30,407	2	Medicine Bow	45,725
6	Snoqualmie	23,711	6	Snoqualmie	44,580
6	Washington	23,453	6	Santiam	44,572
6	Crater	22,649	6	Olympic	44,316
1	Kootenai	22,504	3	Coconino	42,433
1	Kaniksu	21,567	6	Wallowa	38,857
6	Wallowa	20,136	6	Washington	34,626
	Total	494,800		Total	$1,018,825

SOME BATTING AND FIELDING AVERAGES IN TIMBER SALES (Concluded)

The blue ribbon for the highest average stumpage price in commercial sales during the calendar year 1922 goes to the Alabama Forest. Of the 15 leaders in the above cut and receipts column, only the Kaniksu appears among the 10 highest stumpage price Forests.

In sales at cost rates the Beaverhead, with a cut of 1,718,000 feet, led all other Forests. The Targhee, however, was a very close second. The "cost sales" cut on the 10 leading Forests aggregated 8,417,000 feet, or 40.4 per cent of the total cut on all Forests under such sales.

Figures for the 10 leaders in average stumpage prices and cost sales are given in the following table:

Commercial Sales - Calendar Year 1922			Cost Sales - Calendar Year 1922		
Dist.	Forest	Average price per M ft.	Dist.	Forest	Amount M ft.
7	Alabama	$9.42	1	Beaverhead	1,718
2	Minnesota	7.38	4	Targhee	1,598
1	Selway	6.48	5	Modoc	939
7	White Mountain	6.08	6	Umatilla	832
1	St. Joe	5.30	6	Fremont	693
7	Ozark	5.06	1	Madison	605
5	Santa Barbara	4.81	4	Weiser	605
7	Arkansas	4.70	2	Black Hills	493
1	Kaniksu	4.59	1	Absaroka	487
1	Beartooth	4.21	4	Salmon	447
					8,417

The table that follows summarizes the timber sale business by Districts:

Dist.	Receipts from timber sales and timber settlement fiscal year 1922	Timber cut - M ft. B.M. Calendar year, 1922 Commercial sales	Cost sales	Average price received per M under commercial sales
1	$360,795	122,316	5,066	$3.21
2	199,932	83,628	2,633	2.57
3	127,240	78,035	1,743	2.12
4	85,400	31,536	5,620	2.04
5	371,183	214,494	2,111	3.09
6	497,475	272,903	3,360	2.11
7	111,690	29,292	293	3.51
8	31,698	23,943		1.73
Total	$1,785,413	856,147	20,826	$2.59

SPEAKING OF RUTS

By Ranger Stavely, Cochetopa

Generally speaking, ruts are associated with heavy loads and bad roads. Ruts may lead from the ranch house to town or to the corner post office. They may lead from the skidway to the sawmill and from there to the Ranger Station. One might be a nice easy trail leading to some grazing division, and, don't forget, close to some particularly attractive fishing stream.

For a good many years we have been endeavoring to perfect our system of trails. A good trail is a mighty fine thing to follow in going to a fire, (if it leads in the right direction), or to slide into when going home after a hard day's ride. It is not difficult to keep things in first class condition along a good trail, and you know visiting officers enjoy following a good trail.

Do not misunderstand me. I am for trails all right, and good ones; but it has occurred to me a number of times if we would get out of these well beaten ruts and go up the other side of the gulch or on the other side of the hill, where there are no trails, we might see more and possibly stumble onto something we did not know was there.

VERBUM SAPIENTIBUS

By "Daytonius," Washington

Ranger Bill and his myriad fellow proletarians of the Service long ago read a jeremiad from the honored Editor of this periodical anent the dearth of contributions therefor. This organ, it seemed, is tabetic from inanition and is on the toboggan to cachexia and rigor mortis; pabulum is needed in the form of quill-gymnastics on the part of the virile he-men of forest, field and fen; pretty soon even a gland operation might be too late! This editorial Macedonian cry aroused some painful reflections. Was this mirror wherein (with due regard to the proprieties and police regulations) the Brummels and Chesterfields of the Servuce do dress themselves to be removed from the wall and placed in storage? Was this mead whereon our silvic chivalry do joust and tilt right merrily, to the delectation (or otherwise) of Colonel Bill and his regiment, to be placarded with "Closed Against Grazing" posters?

"These eyes," too, perused the editorial threnody and (Einstein, oder Zweistein, es macht nichts aus) two lachrymal globules gravitated adown our auburn chin-whisker, coalesced and became a grease spot on the table in front of us, marring the oaken lustre produced but a few moments before by the skilled massage of a sable brother from Maintenance. Our thought reverted to some conversations we had had in last year's Bulletin with Brother P. A. Thompson, whilom boss of the Orient Ranger District on the Colville, and how the ruthless ruby crayon of yon Editor had, with gelid insousiance, removed whole lines of the mss. forever from the ken of High-up, Lown-down, and In-the-middle. Especially did we bewail the rapture from our mss. of a certain couplet which had been the apple of our eye and whose loss had left us bereft and comfortless as Rachel. Vainly, said we, we offer each ample oblation, odors of epistolary Edom, and gems from the mine of memory; but 'tis the way of all editors; they have no hearts; spades (or clubs) are trumps with editors! With naive parental jubilation we have trotted out the offspring of our respective cephalic ganglia; proudly we have bedecked them with verbal pink hair ribbons and the bright pinafores and roundabouts of diction, wistfully we have led these grammatic heirs to the editorial sanctum to be admired, and waited x x

"Till fell the frost from the clear cold heaven,
as falls the plague on men,
And the brightness of their smile was gone, from
upland, glade and glen."

Alas, our brain-seed has passed through the fire to Moloch. 'Tis a crool world, mates!

But, seriously, and in all fairness, there is another side to this picture, isn't there? This Bulletin should be a veritable clearing-house of ideas for the whole Service, and the Editor has told us that but 10 per cent of our personnel contribute to its pages. Since nearly everybody in the Service is an authority on some subject or other, were this mute 90% to become vocal in the Bulletin, these pages would become ten times as authoritative, as worth-while and readable. The Editor would have his job cut out for him then; think, for instance, what fun he would have whetting his Doxon's Oriole Red No. 811, or his A.P.C. BB Blue #1201, and trimming down a screed like this to fit the slender limits of his hebdomadal octavo!

Ever reflect on the etymology of that interesting word "bulletin?" The beetling-browed pundits that compile our lexicographies tell us that "bulletin" is derived from an Italian diminutive of the Latin word bulla, a seal or amulet worn by children of classic days, and which survives in the leaden seal which appears on the edicts of the Pope known as "papal bulls." This Bulletin, therefore, if it is a bulletin, has authority; it should be a sort of bulla of the Forest Service. What are you doing to give it that authority? Do you expect our Editor to play Boswell to each and every of the 2000-odd Johnsons of the Service and to absorb its knowledge and news by a sort of mental imbibition or osmosis? "Charge, Chester, charge! On, Stanley, on! were the last words of Marmion." On, then, ye mute inglorious Miltons, ye village Hampdens, ye bucolic Cromwells, ye myriad doughty Pythagorases of moor and fen and crag and forest; let's have your "ipse dixits" in the Bulletin! Then, and not till then, will these eight mimeographed sheets speak as having authority, and not as the scribes.

FORESTRY LEGISLATION IN WYOMING

By H. C. Hilton, Medicine Bow

The Forest Service was instrumental in the introduction of four bills in the present session of the legislature, all of which were passed by the House, but only two of which were passed by the Senate and signed by the Governor.

The bill relating to punishment for destroying or mutilating road and trail signs erected by the State or Federal Government became a law. Another bill relating to the cutting of timber and providing for the disposal of brush on private and State lands was amended to apply only to State lands. This law provides for the disposal of brush under the direction of the Commissioner of Public Lands on State lands upon which timber is being cut. The law also provides authority for the State doing this work if the timber operator refuses to do it, with expenses to be paid by the operator. It is also provided that before cutting on State lands each operator shall report his intention to cut to the Commissioner of Public Lands.

The provision relating to private lands was opposed by the Wyoming Timber Company, operating on the Medicine Bow Forest, which owns extensive holdings of timberlands. It was also opposed by one State Senator who claimed that the going upon private lands for the purpose of disposing of brush constituted confiscation of private property. An effort should be made two years hence to amend the law to provide for the disposal of brush on private lands.

A bill providing for a State nursery, the disposition of trees to residents of the State, and advice to residents of the State in reference to questions of silviculture by the Commissioner of Public Lands was killed in the State Senate on the grounds that it only provided a means to call for an appropriation two years hence. An effort is now being made to interest the University of Wyoming at Laramie in the establishment of a nursery to grow trees for campus planting and for the starting of an arboretum. Members of the State Board are favorable, and if a nursery is established it is believed a law can be later passed to include the provisions of the proposed law.

A bill giving authority to State and Federal officers to arrest without warrant for observed violations of the fire laws was killed in the Senate. Opposition was made on the grounds that the common law giving a citizen power to arrest for observed violations was sufficient, and, further, because it was inadvisable to extend farther the authority of State and Federal officers.

No attempt was made this year to pass a law prohibiting the driving of timber on streams of the State.

Action was initiated at a rather late date and perhaps the success would have been greater had it been possible to secure earlier action. At any rate, it is believed that a great deal has been gained by bringing forestry questions before the legislature.

BASIC PRINCIPLES OF SUCCESS

By B. I. Shannon, D-3

In a lecture in the District 2 ranger study course, Supervisor R. E. Clark states that success in range management is attainable by the application of these three basic principles:

(1) Know what you want.
(2) Fix definite responsibility for accomplishment.
(3) Follow through to complete realization.

Obviously these are basic principles of success in any line of human endeavor, be it business organization, road building, stream stocking, or what not. I am confident that the trouble which many of us are experiencing with "working plans" and "objectives" is that we have not applied that first principle, we have not yet determined, definitely and thoroughly, just what we want. Some one has aptly observed that "knowing just what you want is halfway to getting it." Whether it be Supervisor, Forest Examiner or Ranger, if each will grab his problem by the ears, look it squarely in the face until he becomes thoroughly familiar with every feature, and knows just what it needs, in other words, know just what he wants; then definitely fix responsibility for accomplishment, see that it is given a prominent place in the working plan

BASIC PRINCIPLES OF SUCCESS (Concluded)

of the person to whom it is assigned; then make ample provision in his own working plan for follow-up, inspection, and reminders, ride close herd on the job, keep frayed edges trimmed, energies concentrated, the goal always in front, and stick to the main trail, then - Lady Luck will smile on him.

Everyone who has visited the Washington office is familiar with the quotation from Huxley, which appears in large letters in a frame hung in the hall of the seventh floor, "Science is nothing but trained, organized common sense." Of course, the man who tackles his problem with a strong back, a will to win, and unbounded faith in himself is certain to get somewhere, though as a general thing it will not be just where he started for. But if he conscientiously applies to his problem the three fundamental principles referred to, he is practically certain of success, for the essence of these principles is trained, organized common sense.

WASHINGTON NOTES

Colonel Greeley has left to attend the conferences of the Senate Committee on Reforestation which are being held in the Lake States. From there he will go to Districts 5 and 6.

L. F. Kneipp has returned to Washington from a two months' trip to all District headquarters and parts of the Angeles, Prescott, Coconino, Santa Fe, Manzano, Lincoln, and Florida Forests. He also attended the meeting at Duluth called by Secretary Wallace for the purpose of discussing the proposed road building program on the Superior National Forest, against which much protest has been made by local organizations.

Error in Report of Time Away from Headquarters: In the Bulletin of April 16, the time away from headquarters for the Logging Engineer in District 2 was given as 83 days under Column A, and 110 days under Column B. This should have been 128 days under Column A and 148 days under Column B. The figures erroneously given were for the Chief of Planting.--R.H.

Camp Equipment for Boy Scouts: Camp equipment for Boy Scouts may be purchased from the Surplus Property Division of the War Department at twenty per cent of cost. Inquiries should be addressed to the Quartermaster General, Attention of Surplus Property Division, Washington, D. C.

The above information will answer the frequent queries received in Washington as to whether camping equipment is available without charge for Boy Scout organizations.--P.D.K.

White Ash and Poisonous Snakes: A use which is made of white ash and that until recently was unknown to the writer, and is perhaps not very widely known in general, was brought to my attention on a recent trip to the Monongahela National Forest, West Virginia. In talking with some of the native people, I learned that it is quite common for people in that region to stew up some of the inner bark of white ash in the spring of the year and keep the resulting solution on hand for use in the case of poisonous snake bite. I do not know just what the resulting components of the liquid are when white ash bark is boiled. The native people, however, say that it is very efficacious in the case of poisonous snake bite. A bite is washed with the liquid and a wet poultice of the liquid is also put on the wound.--C.R.T.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Roads on the Superior: Last month, upon the call of the Secretary of Agriculture, a meeting was held in Duluth, Minnesota, at which representatives of several outdoor and wild life organizations were present to discuss the proposed road building program on the Superior National Forest. A great many protests had been filed with the Secretary against the construction of the roads composing the Forest Highway System, principally on the assumption that the construction of automobile highways in and near the Superior National Forest would impair the scenic qualities of this lakeland area.

DISTRICT 2 (Concluded)

The interested organizations take a position that water transportation should be the only method employed in the Forest, and that the area should be kept as typical lakeland and canoe country and maintained as nearly in its wilderness condition as is possible. This area is regarded as the one last Federal property which is suitable for the canoeist and the pleasure seeker who desires to visit an actual wilderness.

The meeting was called in the hope that the opposing factions could come to some agreement on the use and development of the Forest. There were, of course, sincere advocates of the road building program, but at the meeting they were in the minority. It was impossible to convince those in attendance that there was real necessity for roads, or that increased fires would not closely follow the construction of automobile roads entirely out of proportion with the increased facilities for fire suppression.

Such local organizations as the State Forester, State Game and Fish Commissioner, Highway Commissioner and County Commissioners were represented, but did not urge strongly the construction of roads. The Game and Fish Commissioner, on the contrary, opposed the roads because, in his opinion, the construction of roads, which must result in increased visitors, would drive the game back into interior regions and perhaps even into Canada.

While those opposing the roads were doubtless sincere in their arguments against any road construction which would admit of the passage of automobiles, they were quite inconsistent and were poorly informed. At first, the outdoor life organizations were prepared to oppose the marketing of any timber in the Forest, but passed no resolution upon that subject, and later stated that no objection would be offered at all to the Forest Service plan of management.

One important outcome of the meeting is the interest manifested by other than local people in the Superior National Forest, and in the whole subject of forestry. The meeting passed a resolution committing itself to secure legislation authorizing the purchase of all the private lands within the present boundaries of the Forest, the extension of the boundaries, north and south, and the acquisition of private lands there. This will probably at least double the acreage of the Forest.

An association was formed, which has for its object the improvement and development of the Forest for recreation. It expects to incorporate and take permanent interest in the management of the Forest, functioning quite similarly to the recreation associations formed in Colorado for the purpose of promoting the recreational use of the National Forests.

Demand for Sheep Range Increases: That the sheep industry is rapidly coming back is shown to some extent by the increased applications for forest range. During the past two years a good many of our more remote ranges went begging; but if present applicants do not fall down at the last minute, there will be a very limited amount of unused sheep range in D-2 this season.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Cooperation: Inter-helpfulness or cooperation between bureaus of the Federal Government has been the subject of conversation among Department of Agriculture people on many occasions. Members of the Secretary's office who have been in the Southwest expressed their appreciation of the fine spirit that exists in this part of the country. Secretary Wallace has also been impressed and pleased with the condition he found on his recent southwestern trip. This fellowship extends beyond the Departments and was splendidly voiced by the Secretary of the Interior, Dr. Hubert C. Work, in his address to Department of Agriculture employees in Washington this month. The address is reproduced in the Official Record for April 18, and is worthy of careful reading.

Forest Protection Week Big Success: Assistant Forester Herbert A. Smith, Chief of Public Relations in the Washington Office, has been in Albuquerque all week. During his inspection of the western Districts he has been in the field during the preparation for the special week. His comment and reports from other Districts indicate that Forest Protection Week has been more widely observed this year than heretofore. More cooperating agencies than usual have thrown in with the Service in emphasizing the nation-wide campaign against forest fires.

DISTRICT 3 (Concluded)

Unknown Tropical Forests: In the United States, where practically every species of tree has been identified and is readily recognized, says Assistant District Forester Kircher in a recent letter from Rio de Janeiro, it is difficult to conceive of vast forests with many unknown trees. Yet that is what the great Amazon Valley contains. It is said that there are over 300 varieties of the family "leguminosae" alone (trees, shrubs and vines) and no one knows how many kinds of trees there are altogether. Several botanists are working on identification of trees. It is understood that they are having a good deal of difficulty because of the similarity of supposedly different species and because of difficulty in finding flowers and fruits of some kinds. It is said that some species only bloom once in 12 years or so. It's a botanist's paradise, however, if he can stand the climate and the pests.

Seasonable News: Supervisor Douglas of the Datil has secured the publication of the entire text of the New Mexico State Fire Law passed two years ago as a news story in a Magdalena paper. This law, as well as the new Arizona Fire Law, is very plainly stated and is really news even without comment.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

New Method of Intensive Grazing Reconnaissance: A new method of intensive grazing reconnaissance was initiated last season on the Fillmore, or at least new so far as the mapping was concerned. Instead of making a detailed contour map as a base, a detailed drainage map was prepared. It is believed just as good information for a practical grazing management plan was secured as under the contour method. It is admitted the base map is not as good, but a satisfactory grazing plan was the goal. The change was made in an attempt to reduce the cost of range reconnaissance. The same kind of triangulation control was used for each method. The field work for mapping and reconnaissance cost during 1921 under the contour method $.049 per acre and during 1922, under the drainage method, $.032 per acre. The latter method cost 65.8 per cent of the former.

Management plans have been formulated on the basis of the 1922 work and their value and practicability will be closely compared by field study to those made as a result of the 1921 work.

Game Violation: A serious game violation has been reported in the vicinity of Boulder, Wyoming. Deputy Supervisor McKee and Ranger Cockins have succeeded in rounding up sufficient evidence in the case of the killing of several head of elk in Boulder to convince the County Attorney that ample evidence was at hand to convict the accused. As result of collection of this evidence and determination of the County Attorney, the three accused elk killers were lodged in jail, but, finally having waived preliminary hearing, each released on $500 bonds to appear in court during the month of June. In one bunch of some 17 head of elk it is reported that two are all that have survived.

DISTRICT 5 - CALIFORNIA DISTRICT

Distinguished Visitor: The office was recently visited by Tsuyoshi Tamura, Doctor of Forestry of Tokio, Japan. Mr. Tamura, in addition to being a landscape architect, is in charge of the Park and Recreation business of the National Parks and Forests of Japan.

Overhead and Fire Suppression Costs: When Supervisors and men from their office go to a fire, is their knowledge and experience worth so much more than that of a Fire Guard or Ranger? The former receive salaries that are often double those of the latter, but do they give double the service on the fire? When the men from the Supervisor's office go to a fire, all of their regular work is stopped. This work is usually important and a real loss occurs. Of course if the fire is too large for the Ranger's organization to handle, it means outside help; but how about the Class A, B and small C fires? Perhaps some of the Supervisors do not allow their force to be used on the smaller fires, but a study of the fire reports will show that some do. Why charge a day's wages to a fire where half the sum could have been charged without loss of efficiency? Or would there have been less efficiency?--Not a Ranger.

DISTRICT 5 (Concluded)

Indian Chief to Fight for Old Lands: Chief Su-pa-hahn, venerable leader of the Karok tribe of the Klamath River country, still has faith in the Great White Father at Washington. He will be a plaintiff in a test suit in behalf of the California Indians soon to be instituted in the United States District Court of the District of Columbia by the Indian Board of Cooperation, of which Frederick G. Collett of this city is executive representative.

The first case will deal with the Klamath National Forest, now a Federal reservation of 1,008 square miles. The Indians, in return for giving up their vast hunting grounds, were to have reserved for them 7,500,000 acres of selected land, as well as other compensation. They claim, however, to have received virtually nothing in return.

Should the Klamath National Forest test case succeed, the Indian board plans to bring other similar suits.

Gray Wolf in California: Reports have come in at more or less frequent intervals concerning the taking of Gray or Timber Wolves in California. These reports have been carefully run down by the Museum of Vertebrate Zoology of the University of California and have hitherto proved, without exception, to refer to the Mountain Coyote (Canis lestes). At last, however, a record has come in which investigation proves to be of a real Gray Wolf, taken in the southeastern part of the State near the Colorado River.--P.J.F.

"And Walk with Kings, Nor Lose the Human Touch": Secretary of Agriculture Henry C. Wallace, while on his way from Los Angeles to Bakersfield recently, stopped at the Tejon Ranger Station. Ranger DeLapp was absent at the time, but Mrs. DeLapp did the honors during the few minutes the Secretary spent at the Station. While a reception committee from Bakersfield was waiting at Lebec, some two miles distant, to meet Mr. Wallace, he took time enough to look the station over and chat awhile.--C.E.J.

DISTRICT 6 - NORTH PACIFIC DISTRICT

State Grazing Ranges: A recent ranger meeting held at Okanogan was devoted to plans of work and preparations for the coming season. This annual get-together always results in beneficial exchange of ideas among all present. It followed the annual meeting of the Okanogan County Livestock Association and sale of pure-bred stock. At the association meeting State Representative Banker, who is President of the Association, announced two bills which he was instrumental in having passed at the last session of the legislature. House Bill No. 120 provides for the State to administer grazing upon lands now being received from the National Forests through the State Land Exchange. House Bill No. 115 fixes the responsibility for livestock shipments on the carrier receiving the shipment, even though it may later be transferred to other roads.--P.T.H.

Side-Winder: Ranger Hougland has fixed up a stand for the K. P. Cecil fire finder which will allow a two-way shift. A track was made for the fire finder running north and south, and another track made running east and west. The fire finder is attached by lugs to upper track, which is attached to a wooden block. Lower track is fastened to top of table or stand. Lugs on each side of lower track are attached to this wooden block. This will enable one to shift the fire finder to miss any obstructions. There is no play in the fire finder. This finder will be installed on Fir Mountain where a cabin was built last fall by ranger labor.--L.B.P.

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THE CRITICAL POINT IN THE FIRE PROBLEM

By Ward Shepard, Washington

The editorial from the AMERICAN LUMBERMAN, quoted by Mr. Shoemaker of D-1 in the Bulletin of April 30, is a good argument for education on forest fires, but hardly an adequate statement of the problem itself.

Fire protection, though the most needed step toward reforestation, is not 85 per cent of the forest problem. As the forthcoming timber crop report will show, Nation-wide, high-grade fire protection, supplemented by seed trees where needed, would if carried out for a long period ultimately produce a little more than half the timber we now use.

But without dwelling on this aspect of the editorial, can the responsibility for forest fires be so simply and neatly shunted to that vague creature, the "public?" Forest fires are the inevitable aftermath of destructive logging, no matter who actually sets them. Destructive logging leaves two serious menaces: a fire trap of slash and a dearth of seed. Fire getting into this slash, whether by the fault of the logger or of some one else, wipes out at one blow or gradually the possibility of forest renewal, or under more favorable conditions permits only a poor stand.

Logging Debris Greatest Menace

We must recognize the debris of destructive logging as the greatest single fire menace; it remains to be seen how successfully we can keep fire - an omnipresent, necessary adjunct of civilization - out of it. It is probable that in the long run our main effort for successful reforestation will consist not of keeping fire out of the trap but of eliminating the trap.

Although definite figures are lacking, it is safe to conjecture that the fires accompanying or following logging operations are in the broadest sense the most destructive of all fires. They come at the critical time when the fate of the future forest hangs in the balance. With plenty of fuel to feed on and widespread apathy to give them free play, they generally make easy prey of seed and seedlings.

In western Washington, according to Munger, 18 per cent of the fires in 1922 were directly chargeable to logging operations; but these fires caused 78 per cent of all the fire damage. Unquestionably many more fires are traceable primarily to old slashings, the rank weeds and grass on clear-cut areas, and the drying of the ground cover after the removal of every trace of the green forest. And on an area denuded not merely of timber but of seed, any fire is extremely critical.

Main Problem of Education

The problem of education, then, is not merely to prevent fires but to prevent these enormous hazards. It is safer to drop a match into a cistern than into a powder keg. And the question is not so much the apportioning of blame as honestly seeking the underlying causes of the fire problem and removing them by a powerful cooperative effort.

THE CRITICAL POINT IN THE FIRE PROBLEM (Concluded)

There is one other aspect of forest fires that needs more public emphasis. Trying to fix a money value on so much mature timber, so many blades of grass, and so many seedlings destroyed by fire does not give a correct picture of the broad, ultimate result. We are rich and are accustomed to digging down and paying up our losses.

But repeated fire does more than destroy present and potential values: it builds up, by geometrical progression and on a vast scale a disheartening array of physical obstacles and moral discouragements against the attempt at forest renewal. It brings the forest as an entity nearer and nearer to destruction. Reduce our food supply to the famine limit and money values of food cease to have much meaning. So gradually fire has passed from the stage of merely wiping out values here and there into the stage of threatening the very survival of our forests. Already one-fourth of our cut-over land is a desert. Who is going to plant it? And who is going to plant the other millions of acres that are being turned into deserts?

WILD CATTLE AND WILD CAMPERS

By Will C. Barnes, Washington

A rather unique condition arose on the Black Hills Forest during the past season because of the presence of permitted cattle on certain areas where tourists, fishermen, and campers found satisfactory places for stopping. It was not so much a question of injury to the camping places, apparently, as it was that the presence of these animals caused some alarm to the campers.

The stockmen protested that the tourists and hikers scared their cattle and made them wild, while some of the tourists were equally afraid of the cattle. One permittee in an effort to meet the situation posted his range with signs to the effect that the range was used by very wild cattle and that hikers and campers entering it did so at their own peril.

The Supervisor found no fault with this manner of bringing the matter to the attention of the public; but the results were exactly the opposite to what the enterprising permittee anticipated. Instead of being scared away from the range, the tenderfeet took considerable satisfaction and pleasure in tramping around over the range, getting a grand thrill out of the fact that they were in danger of wild cattle while hiking in that part of the Forest. According to the Supervisor, the signs rather than discouraging the presence of the tourists increased their presence on the ranges.

"My but ain't Nature grand!"

PUTTING THE "PREVENT" IN FIRE PREVENTION

By Jno. D. Guthrie, D-6

D-6 received in March a supply of Road and Recreation maps of the State of Washington. The map was so popular that there was a near-riot on the part of the public to get copies. About the same time a supply of the new red and black cardboard fire signs was received. Deputy Supervisor Griffith of the Rainier Forest is helping mightily to put the Prevent in Fire Prevention. Griffith tells how he does it (in an informal memo to PR):

"On the strength of the road map distribution, I have secured the posting of the red and black 'Prevent Forest Fires - It Pays' sign conspicuously in the following places: U. S. Mershall's office; U. S. District Attorney's office; Internal Revenue office; Customs office; Geological Survey office; Bureau of Chemistry, tea inspection office; In two prominent places in the main lobby of the post office; In the court room of the Tacoma police court; and over the automobile desk at the police station.

"Lending the weight of 'law, order, and constituted authority' to our propaganda, and in some cases catching 'em in a penitent mood and receptive to suggestions. In each case I requested that the signs be kept up all summer, - some of them will probably be taken down sooner, however.

"I should have preferred waiting with this until Forest Protection Week, but the psychological moment when favoring them with a map was too good to pass up.

"By the way, the maps are quite the 'topic of the hour' here. Each recipient of a map calls personally, promises to read Tom Tourist and Harry Hunter, and 'tell the other fellow' to be careful with fire and observe camp sanitation."

GOATS VERSUS SLASH PINE

By E. W. Hadley, Southern Forest Experiment Station

Out of 960 nursery-grown slash pine seedlings that were transplanted to an acre of unfenced cut-over land at McNeill, Mississippi, in February, 1923, 352 had their terminal buds bitten off and devoured by goats during a period of from one to two weeks after planting. In many cases the entire stem of the seedlings was severed at the ground, leaving a stub less than an inch in height.

The planting site was fenced immediately on the discovery of the damage and one month later an individual examination was made of all seedlings that had contributed in any way to the nourishment of the goats. It was found that of the 352 seedlings so damaged 347 had already begun to sprout and in no case had the hunger of the goats resulted in the death of a seedling except for the 5 that had been impatiently pulled clear of the ground.

This seeming remarkable recuperative power of slash pine seedlings is by no means final evidence that they are permanently goat-proof, for if this plantation had not been fenced the new sprouts would undoubtedly have been nipped off again and again as fast as they grew out, and the seedlings would have eventually exhausted themselves and died. Observations in this instance indicate that young tender buds of slash seedlings are extremely pleasing to the goat palate. Although the seedling is capable of growing a second bud it is doubtful if this ability would remain after the seedling had been deprived of more than one terminal bud.

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Note by Director Forbes: At Raiford, Florida, another remarkable instance of the power of slash pine to sprout after injury was recently noted. About 1921 several square rods of three or four-year-old slash pine seedlings were apparently hacked off with an ax at a height of about three feet from the ground. A very considerable number of these seedlings sprouted near the top, and the sprouts are now two years old and extremely healthy. A longleaf pine sapling or two received the same treatment, with the same result.

PENNSYLVANIA HAVING ITS SHARE OF FIRES

More than 1,000 forest fires have been reported to the Pennsylvania Department of Forestry this spring. Up to April 24, 700 fires were reported, on April 25, 177, on April 26, 77 and on April 27, 60 were reported. This makes a total of 1,014 fires. Not all the fires that have occurred in the State have yet been reported. It is estimated that there had been at least 1,200 fires in the State this spring and that they burned over not less than 100,000 acres.

The largest fire reported was in Hunts Run, Cameron County. It reached a size of 6,000 acres and burned mostly on State-owned land.

Three persons have died from burns received while fighting forest fires in Pennsylvania this spring. This is the largest number of deaths that have occurred in a single fire season since the Pennsylvania Department of Forestry was established.

PRACTICAL SENTIMENT

In the parks of Portugal where large trees are found it is common to find this inscription near the trees:

"Ye who pass by and would raise your hand against me,
Hearken ere you harm me.
I am the heat of your hearth on the cold winter nights,
The friendly shade screening you from the summer sun,
And my fruits are refreshing draughts quenching your thirst as
you journey on;
I am the beam that holds your house, the board of your table,
the bed on which you lie, the timber that builds your boat.
I am the handle of your hoe, your door, the wood of your cradle
and coffin.
I am the bread of kindness, the flower of beauty.
Ye who pass by, listen to my prayer; harm me not."

WASTE OF SUGAR CANE USABLE IN MAKING LUMBER

(Current Opinion)

Woodless lumber, in boards twelve feet high and nine hundred feet long, nearly as high as the Eiffel Tower, the world's highest structure, has been produced at a plant recently erected near New Orleans, La. Trees do not produce these boards; they are made from the bagasse, the residue of sugar cane.

Bagasse, says Science Service, is what is left after the cane has been squeezed through heavy rollers for the purpose of extracting from it its sugar-containing juice. It is this waste material that is being converted into lumber. This bagasse consists of a mass of short pieces of the crushed and broken cane and it is filled with fibers of considerable length. It was for a long time wholly wasted, great piles of it being burned to dispose of it. Mark Twain in his "Life on the Mississippi" says that "bagasse 'fog' was the bane of the river pilot." More recently it has been used as fuel under the boilers of the sugar mills. But it contains so much moisture that its fuel value is very low, and it is so light and bulky that feeding boilers with it has been very wasteful of labor, and it is now being replaced as fuel by oil and natural gas, which have been found to occur in this vicinity in abundance.

In converting it into lumber the bagasse is first cooked to destroy the decay-producing spores contained in it, then treated with chemicals to make it waterproof, then pulped in "beating machines" and then formed into a board which is compressed by passing through rollers into the continuous gigantic sheets which when dried are ready for use. Because of the long fibers existing in the bagasse the material is felted into a structure which is filled with air cells. Hence, the lumber is very light, weighing but three-fifths of a pound per square foot, and, because of the air cells contained in it, it is a very perfect nonconductor of heat.

It is composed of cellulose, as is wood, and it resists exposure to the weather similarly to wood. One ton of bagasse yields 3,000 feet of lumber and the waste from the cane fields of Louisiana alone, it is estimated, will yield over 750,000,000 feet per year.

WASHINGTON NOTES

District Forest Inspector Mitchell, during the first week of May, accompanied State Forester Besley of Maryland and a party consisting of members of the State Forestry Advisory Board and others on an inspection trip through the Eastern Shore counties of Maryland. The party included Assistant Foresters K. E. Pfeiffer and J. A. Cope, Dr. F. J. Goodnow, President of John Hopkins University, Dr. Edward B. Matthews, State Geologist, Major G. L. Wood of the R. E. Wood Lumber Company, members of the State Forestry Advisory Board, ex-Senator William McCullen Brown of Garrett County, a former member of the Board, Dr. J. L. Spencer, President of Morgan College, and Mr. C. Howard Lloyd of Baltimore.

Cobbs Leaves Department: John L. Cobbs, for many years in the Service, recently resigned his position as chief of the Department's Division of Publications to become the head of the public relations work for the Atlantic Coast Line with headquarters at Wilmington, North Carolina.

Signs of Spring Energy! Members of the Forest Service wrote 19 out of the 45 articles in current publications by Department workers listed in THE OFFICIAL RECORD of May 9.

D-5 Puts Out Good Vacation Pamphlets: District 5 has recently put out some good mimeographed pamphlets of from 6 to 10 pages each telling of the vacation possibilities offered by the Forests in California. The location, topography, and climate of the various Forests are described, along with the best rail and auto routes leading to them. Headquarters of Forest officers are also listed.

Hunting, fishing, and camping come in for honorable mention, while hotel accommodations, including garage service for the family Ford, are also described. The pamphlets close with an outline of the rules and regulations that must be observed by visitors. They are being given as wide a circulation as possible.

FOREST PRODUCTS LABORATORY

Laboratory Asks for Wood Samples from King Tut's Tomb: Samples of wood from King Tut-Ankh-Amen's tomb have been requested from the National Research Council by the Washington office to supply a request initiated by the Laboratory. The request will probably be forwarded to America's representative in England. The wood is wanted to determine what effect extreme age may have upon the physical and mechanical properties and upon the glue and joints. It may also be of interest to determine the species of wood as an indication of the forest flora for that period, and the relative durability of the different species.

Party for Allotment Conference Visitors: A record-breaking crowd attended the April meeting of the Forest Products Club given largely in honor of our visitors, Messrs. Clapp, Betts, and Shepard of Washington, D. C., District Forester Morrell of Missoula, Montana, and Mr. C. L. Hill of San Francisco, California.

Talks by President Truax and Messrs. Winslow, Clapp, and Morrell, songs by the Club sextette, movies, cards, and unexpected telegrams filled the evening. One telegram recalled the prowess of the Washington office representatives in the Inter-District league, another came as a warning from the District 1 financial backers of Mr. Morrell, and one from Chicago led us to suspect Mr. Hill's hitherto spotless reputation.

How Long Will Paint Last? Data on the durability of paint on various species of wood and different grained surfaces are being collected by District 1 for the Laboratory's study on wood finishes. A special questionnaire sent by this District to its field officers includes questions on the kind of paint, method of application, nature of paint failure, and other information with reference to painting practice. A great deal of valuable information should be received through this cooperation.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Alkali Ranges and Salt - D-3 Take Notice: (See D-3 paragraph carrying this heading in Service Bulletin of April 16). Ranger Woods won a bet when he proved that cattle prefer salt to alkali on alkali ranges. It is probable that Ranger Woods had a card "in the hole" that he did not show because he was able to win the bet without showing it. He won on a showing that cattle prefer salt to alkali. He no doubt would have proven, if necessary, that alkali is a poor substitute for salt even if stock would eat the former as readily as the latter. The constituent of common salt that best meets the bodily requirements is chlorine; alkali contains little or no chlorine (see report of experiment by Wis. Exp. Sta).

The explanation of livestock seeking alkali if common salt is not available lies, it is presumed, in the statement that alkali satisfies to some extent at least the appetite for salt. But it is only necessary to cite "hooch," my old pipe and the "dope" that the "hop head" uses to call attention to the fact that that which satisfies the appetite is not necessarily the thing that should be indulged in.--L.H.D.

Our Own Question and Answer Service: We have read with much interest the account of Ranger Stock's horse round-up and are wondering if it takes sixty-four riders to gather 212 head of horses that are mostly G-5 and therefore "administratively" at least broke stuff, how many riders should be required to round up 212 head of wild horses?

Another Shake-up in D-2: One of the hazards of life in D-2 is travel on the Denver & Rio Grande Railroad. Assistant District Forester Granger and Fiscal Agent Buckner had a narrow escape from extinction this spring when they were involved in a head-on collision in the Royal Gorge. Fortunately they received nothing worse than a good shaking up.

Plains Regions Suffering from Drought: While the snowfall in the Colorado Mountains has been unusually heavy this past winter, the plains regions east of the mountains are suffering severely from lack of moisture. The effects of drought are also showing up in the way of losses in established plantations of jack pine.

DISTRICT 2 (Concluded)

Horse Round-ups on the Harney: The Harney Forest has several times made horse round-ups similar to the one described on the Minidoka in the Bulletin of March 5. These round-ups have been on a somewhat larger scale, and little of the stock rounded up was being run under Reg. G-5. In fact, most of the horses which were rounded up were about as wild as they make them, as little branding had been done for three or four years and horses had not been corralled or handled during that time. Also, in many cases the bunches which were easiest to get had been rounded up and taken out of the country and the worst horses left on the range.

One of the largest of these round-ups was on the Pilger Mountain range. This came as somewhat of a surprise to most of the permittees, but cooperation of about a dozen settlers was secured at different times. In ten days 430 head of horses were rounded up, branded, and delivered to owners. Owners were easy to find with the exception of three head of branded horses. With unbranded horses there were often too many owners. To break the monotony of settling ownership and chasing wild horses over rim-rocks, we had two or three bronco riding exhibitions and one pugilistic encounter. Ranger time and expenses were well paid for, as trespass damages to the amount of $444.40 were collected.

DISTRICT 3 - SOUTHWESTERN DISTRICT

This is Worth Study: Note the area burned in this District in connection with evaporation at Elephant Butte Dam:

	1917	1918	1919	1920	1921	1922
Precipitation	11.2	14.8	20.2	14.2	15.2	10
Evaporation	110	105	91	101	103	106
Fires	715	720	390	420	435	900
Area	50,000	35,000	6,000	14,000	18,000	35,000

Cooperative Publicity: The April issue of the TIMBERMAN gives the National Forests of New Mexico a very good write-up. One whole page is devoted to the resources on the Forests taking each Forest up separately. A very good map of the State is shown giving the location of each Forest and other data regarding the State. The TIMBERMAN has given the Southwest, and especially the National Forests of the Southwest, some excellent publicity within the past year.

Working Plan Approved: The Forester has approved, subject to later submission, of a cutting budget allocating the cut to specific logging units, the management plan report for the Tusas-San Antone Working Circle on the Carson National Forest prepared by Forest Assistant Fred H. Miller. The gross area of the circle is 265,000 acres, of which 51,560 acres is virgin timber. The stand is estimated at 136,313 M feet. The allowed annual cut is placed at 14,000 M feet per decade. Five small portable sawmills are at present cutting within the circle. The product of these mills is used locally and the surplus is shipped to the general market. No new mills will be allowed to start on the circle.

Erosion Control Cheaper than New Roads: The road to the Canyon Lobo Ranger Station on the Manzano has in recent years been crowded into the hillside by a gully forming in the canyon bottom. Ranger Lancy and Supervisor Kartchner decided it would be cheaper and easier to stop this gully than to build a new road, and accordingly the critical points have been planted with willow cuttings and then protected by oak trees strung on a doubled barbed wire anchored parallel to the bank by means of trees and posts. The oaks hung top down, slanting downstream, with the top weighted down by rocks. One hundred feet of such works can be installed by three men in an hour, including willowing. It is believed that the first high water will clog the brush and anchor it so as to relieve strain on the wire, and within two years the willows will bind the whole works so strongly as to check caving and stabilize the bank at the angle of repose.

New President: Chas. E. Burton of Ash Fork has been made President of the Arizona Wool Growers' Association vice Hugh Campbell who retired on account of illness.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Debating in the District Office: The girls in the Ogden Office have been branching out from the regular grind and indulging once a week in various things out of the ordinary. The last of these diversions was a great debate. The subject was, "Resolved, that five years' clerical work in the Forest Service better fits one for advancement and competition in the business world than does five years' clerical work in the commercial world."

Of course we all agreed beforehand that the affirmatives did not have a chance. They put up a fine argument, however, and carried off the honors, and, what's more, they have convinced us that there really was something to their side of the question.

Returns to the Service: Mr. Jack Albano, recently of Red Cliff, Colorado, has arrived to take a position as Ranger on the Wyoming Forest. He will be located probably in Star Valley. Mr. Albano was formerly a Ranger in the Service in Idaho and Colorado and is coming back to work after a couple of years' absence.

New Ranger Appointed: Mr. Guy C. Bacon, who acted as assistant to Ranger Ross on the Weiser last summer, has been appointed Forest Ranger on the Idaho, effective May 1.

DISTRICT 5 - CALIFORNIA DISTRICT

Decoy Stakes Boon to Surveyors: In a recent survey on the Santa Barbara it was necessary to use strategy in preserving corners left in the field to mark the boundaries of Government land. A certain predatory neighbor subject to night prowling makes a point of destroying all marks left on the ground by surveyors. We therefore drove iron pipes about two inches below the surface and referenced them in without leaving any marks, then set out "decoy" stakes for the prowler to operate on. Thus the P. N. destroys the decoys and is happy, while we still have our corners preserved.--W.H.F.

Bull's-eye Publicity: Ranger Tyler got out three "Put Out Your Camp Fire" signs this month. These signs are about 13 feet in length and are painted black on 8-oz. white canvas, with letters 8" in height, carrying the F. S. shield on the left end. They will be placed at the Forest boundary in the following locations: Sonora-Mono State Highway at Sugar Pine, Carson-Big Tree State Highway below Calaveras R. S., and Big Oak Flat-Yosemite State Highway just west of Big Creek. These signs are large enough to be read by passing auto tourists at a considerable distance. The cost per sign was $6, including Ranger Tyler's time, and with care they should last at least five years.

Cattle Etiquette

Meeting Livestock -
1. Slow down.
2. If the road is narrow, drive to one side at the widest available point and stop.
3. Shut off the engine.
4. Stay quietly in the machine.
5. Do not blow the horn.
6. Do not permit dogs to bark.
7. Breaking up an orderly procession gains nothing.

Overtaking Livestock -
1. Slow down.
2. Do not blow the horn.
3. Ask the man in charge to lead the way through.
4. Drive to one side of the main group as much as possible.
5. Do not yell.
6. Do not permit dogs to bark.
7. Never crowd where the chances of passing are negative.
8. Breaking up an orderly procession gains nothing.

DISTRICT 5 (Concluded)

The psychology of domestic animals causes them to bunch when frightened. This bunching presents a solid wall of livestock to the motorist. Therefore blowing the horn or allowing dogs to bark only delays passage. Livestock when crowded squarely from the rear will generally continue in the center of the road; therefore work quietly to one side of them. Crowding livestock into a run is usually costly haste with no gain. In meeting or overtaking livestock, above all else slow down and proceed as quietly as possible.--California Cattlemen's Association.

DISTRICT 6 - NORTH PACIFIC DISTRICT

YOU SAID IT!

Dear Sir:

On page twenty-four
Of the Six-Twenty-Six
For March
You say that you
Wanta know
Who put all those terrible things
in the National Forests.
I cannot tell you that;
But I can tell you
That "PR" is putting
The "EVENT" in "PR-EVENT-ion"
And telling people about
The "REST" they can find in a green fo-REST
And arousing public IRE against
The f-IRE-bug who puts
The FIR in the FIR-e.
PR-VENT fo-REST f-IRE-s.
It pays.
I thank you.

G.E.G.

Talks at Eatonville: Supervisor Allen and Forest Examiner Griffin attended the monthly luncheon of the Eatonville Business Men's Club which was held recently. Mr. Allen was the principal speaker of the evening, taking as his topic, "Activities of the Rainier National Forest." Mr. Griffin spoke on Reforestation and answered a number of questions on forestry matters. Eatonville is one of the important smaller towns near the Rainier Forest, and this meeting was a decidedly important contact.--G.E.G.

Maple Sugar: The maple sugar industry is not entirely confined to the East. There came around the first of March this year a few days of real old sugar weather, freezing nights and warm days. Ranger Wheeler of the Oregon, located at Cascade Locks, made two quarts of pure maple syrup by tapping a few shade trees about the station.--F.W.C.

"What's In a Name?" The Rainier office has just been advised that a man named Lamb has been elected president of a Cattle association. How come?

The Walla Walla District of the Umatilla: Forty-seven miles as the crow flies from the head of Butcher Creek in the south to Deadman's Peak at the north end. How many miles by trail, you ask? I don't know; but if you should go down Butcher Creek out past Hellhole and Shimmie-Horn it to Graves Butte, you'd be ready for that place without question. Get an early start and climb Coyote Ridge, have a look at yourself in Looking-Glass Creek, go on to Bone Springs for the night, and you'd think you were all bones. The third day you would reach the Milkshakes, about 3 p. m., only to find the milk, shakes, and water all missing; but by climbing over the famous Table Rock (well named) you would reach Deadman's Peak, via the Hogback route, just about sundown. You wouldn't be interested in scenery, but it's grand.--C.L.K.

Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

Vol. VII, No. 22. Washington, D. C. May 28, 1923.

RELATION OF IMPROVEMENT CREWS TO COST OF HELD LINE

By Fred Morrell, D-1

An effort has been made through analysis of data on the cost per chain of held fire line to secure reliable information concerning the relative efficiency of organized protection-improvement crews as compared to crews of temporary fire fighters. While it is impossible at this time to assemble data that offer absolute proof on this point, every compilation of figures that has been undertaken indicates a decided advantage in favor of the protection-improvement crews. The figures indicate that they are able to build and hold line for about two-thirds of the unit cost of line built and held under similar conditions by temporary fire fighters. The Forests using the protection-improvement crew plan of organization also show a slightly smaller percentage of Class C fires and a substantially lower average cost per fire than the others in their respective groups.

Table A was compiled by selecting fires handled by the two types of organization and comparable in timber type, length of held line, season and region; and Table B, by selecting forests comparable in those features. Because of irregularities and omissions in the data, or unusual circumstances surrounding the fires, only a few fires out of those reported are available for use in Table A, but those few are believed to be fairly representative of conditions.

These figures bear out the opinion of field men who have given the protection-improvement crew scheme of organization the most thorough trial during the past three years. The figures and the opinions of the majority of field men are strongly supported by inference when one considers that there is, on the one hand, a careful selection of personnel, organization, preparedness and a real incentive to every man in the crew to get every fire out as quickly and easily as possible as against, on the other hand, hasty selection of personnel, complete absence of any organization except in overhead and equipment, no preparedness on the part of the crew, and an incentive to make the job last because it pays slightly better wages than other work.

Table A
Based on Fires in Similar Types in 1920 and 1921

	No. of fires	Chains Held Line	Man Hours per chain No transp.	Per cent cost incurred prior to control	Cost per Chain No Transp.	Cost per Chain with Transp.
Temp.Labor Fires	15	2259	23.5	67	$12.13	$17.30
Impt.Prot. Crew Fires	15	2104	14.3	75	6.80	9.61
Apparent Saving by Crew			9.2		5.33	7.69

RELATION OF IMPROVEMENT CREWS TO COST OF HELD LINE (Cont.)

Table B

	No. of fires	Chains Held Line	Man hours per chain No transp.	Per cent cost incurred prior to control	Cost per chain No transp.	Cost per chain with transp.	% C fires	Cost per fire	Number of fires used
Temp.Labor Forests	86	10765	17.5	67	$11.71	$15.40	13	324	723
Impt.Prot. Crew Forest	87	10503	14.5	70	7.87	10.51	11	211	930
Apparent Saving by Crew			3.0		3.84	4.89		113	

Table C

Cost of Held Fire Line by Timber Types 1920, 1921 and 1922

Type	Number of Fires	Chains Held Line	Man hours per chain	Per cent cost incurred prior to control	Cost Held Line per chain
Grass	20	2631	1.7	82	$ 0.65
Brush	14	1043	9.0	78	4.51
Yellow pine	46	3680	8.8	60	4.76
White pine	29	6553	16.6	72	9.45
Lodgepole pine	33	3769	9.4	68	5.26
Douglas fir	28	2510	14.5	84	6.69
Cedar*"Hem.*" W. Fir	7	904	12.3	76	5.90
Ced.*... " W. Fir	7	1654	6.2	71	3.17
Larch D. Fir	48	8843	14.8	62	5.82
Engl. * Spruce	5	873	21.4	66	14.40
Subalpine	20	2286	9.7	76	5.53
Slashings	12	1798	9.5	77	4.40
Old burns	71	11185	19.3	65	11.15
Y. pine D. fir	10	1761	8.1	63	4.66
Totals	350	49510			
Weighted averages			13.5	67	7.65

Impt.

*Figures not considered good averages because of small number of fires and small amount of line involved.

Table C is believed to be indicative of the reasons why held fire line costs so much more in some localities than in others. The following conclusions seem to be warranted by a study of the factors entering into Table C:

1. In general, in this region on areas not previously burned, the unit cost of fire line is proportional to the density and volume of the timber stand.

2. Old burns give the highest cost per unit of held line of any type for which a good record is available.

3. The cost of held line in D-1 is, and will continue to be, relatively high because a large percentage of its fires occur in old burns and in the white pine type.

4. For all types an average of 67 per cent of the cost of held line is incurred prior to control of the fire.

5. Costs expressed in dollars are of little value for comparative purposes because of the fluctuation of the purchasing power of the dollar. Costs expressed in man hours are much better.

6. Considering the amount of labor involved in the construction of a chain of fire line, it appears that the indicated costs are excessive and that it should be possible to reduce them by good administration.

SPEEDING UP CLAIMS FOR DAMAGES

By Paul D. Kelleter, Washington

Reimbursement to owners for damage to or loss of private property through negligence of officers or employees of the Federal Government will be speeded up under the provisions of the Act of December 28, 1922.

Up to the enactment of this law no special provision existed for the preparation and consideration of claims prior to submittal to Congress. As things stand now, authority is given the departments to consider, ascertain, adjust, and determine any claim on account of damages to or loss of privately owned property where the amount of the claim does not exceed $1,000 caused by the negligence of any officer or employee acting within the scope of his employment. Such claims are then certified to the Congress for final action. All claims must be presented within one year from the date of the accrual of said claim.

This means that the claimant does not have to work through his Congressman for action and that the department responsible for the damage may initiate action looking to the reimbursement of the injured party.

OLD MAN HABIT

By E. H. MacDaniels, Siskiyou

Did you ever happen to think how much trouble and time habit saves? For example, a man gets out of bed in the morning, and his hands start right in putting on his clothes for him, while he puts in his time thinking that it looks like a fair day and that he'll just saddle up and look over the work of that trail crew down the river, and that Baldy needs shoeing so he'll ride Bob, and that this will be a good chance to drop in on Si Jones and settle that telephone business.

Supposing that he had to painstakingly remember every time that his flannel shirt goes outside the other one, and that it makes a difference which foot he puts his shoes on. Supposing that his memory slipped sometimes, and he had to determine by a course of reasoning which side do his pants belong. It is easy to see that in such a case his logic would sometimes miss fire and he'd make a mistake that would cause comment or even criticism.

But old man Habit doesn't make mistakes of that sort - he has attended to that job in just that way many thousand times. He has found the quick, easy, successful route to the object he is after and follows it without experiments or failure.

Experience Brought Together in Manuals

Now, when an organization such as ours has worked for many years, it gets into the same sort of habits. The great mass of the work has been gone over many times by many men, the short cuts found and used, the experiments tried, the failures made, and the right way to do it pretty well mapped out. This experience has been brought together in the various manuals and discussed and worked over and amended, and finally the best way of doing things pretty well decided upon. There are hundreds of ways to build a trail, and thousands of reasons for building them those different ways; but after spending several million dollars on trails the Service has pretty well settled on two or three types that are described at length in the manual.

The tread can be of any width, but no reputable mountain horse will use more than sixteen inches of it. Anybody can invent a culvert - pretty nearly everybody has - but two or three kinds will answer every purpose, are durable and inexpensive - why experiment further? There are dozens of ways to splice a telephone line, but what's the matter with the Forest Service splice? The way to handle business and get it out of the way is to get it into an easy, smooth running system that doesn't call for a new invention every few minutes.

The trail, road, telephone, and fire fighting manuals supply this system ready made. No one can save himself grief any easier than by getting outside those manuals and following them out in detail. He will find that his trails stay put and his telephone lines keep on talking and his maintenance charges are low, when others, who knew more than the old-timers who wrote the manuals, are breaking their backs repairing washouts and propping up corner poles. I surely recommend thorough acquaintance with those little books as a cure for a great number of the ills that beset the Service.

RECEIPTS AHEAD OF LAST YEAR

Receipts from National Forests for the nine months beginning July 1, 1922, and ending March 31, 1923, totaled $3,386,620.60, an increase of $10,384.66 over the same period a year earlier, according to the corrected statement compiled on April 28 by Finance and Accounts.

Timber sale receipts formed the largest single item with a total for the nine months of $1,833,359, an increase over the corresponding period a year earlier of $675,454. Receipts from grazing operations totaled $1,265,435, and receipts from special uses totaled $167,813.

District 5 led all other districts in the total amount of receipts with $778,413. District 6 came next with $647,174, and Districts 3, 2, and 4 were bunched with receipts of $495,874, $474,094, and $436,574, respectively. District 1 reported receipts of $389,367, District 7 reported $123,553, and District 8 reported $41,568.

HAIL TO THE VETERANS!

District 3 sure started something when, in the April 15 issue of the Service Bulletin, it asked whether Ranger H. L. Taylor's record of 15 years' continuous service on the same Forest under the same Supervisor could be beaten. Harken unto these replies:

D2, Minnesota - Ranger George Farley entered the Service on June 3, 1902, and was transferred to the Minnesota Forest on July 1, 1903, where he has worked continuously since November 1, 1903, under Supervisor G. E. Marshall. Thus Ranger Farley is rounding out 20 years continuous service on the same Forest under the same Supervisor.

By the way, Supervisor Marshall states that the Minnesota has been under the jurisdiction of the Forest Service since 1902 and was never under the General Land Office.

D2, White River - Ranger Elmer E. Stephenson entered the Service on June 1, 1907, and was stationed on the White River Forest, where he has worked continuously since that date under Supervisor James A. Blair. Thus Ranger Stephenson is rounding out 16 years of continuous service on the same Forest under the same Supervisor.

HAIL TO THE VETERANS! (Concluded)

According to the records of Rangers Taylor, Farley, and Stephenson, the first hundred years seem to be the hardest. It likewise seems to be a great life if you don't weaken. Who else knows some interesting records concerning the personnel of the Service? Next!

DELINQUENCY IN PAYING GRAZING FEES

It is evident that the question of delinquency in the payment of grazing fees is a minor matter when one studies the delinquencies in State and county taxes in some of our western range States. The report of an association of taxpayers in New Mexico shows taxable valuations in that State have fallen from $405,000,000 in 1920 to $300,000,000 in 1923. The total delinquent taxes have now reached the enormous sum of $5,000,000, mainly due from taxpayers who are unable to meet their obligations.

On the basis of the amount of taxes due, this $5,000,000 represents a delinquency of about 37 per cent of the total. This certainly exceeds the delinquency of our permittees by a very large margin, the largest item we have in that respect on any single Forest being a little over 12 per cent of the total amount due from grazing fees.

WASHINGTON NOTES

Maryland Forestry Board Entertains Washington Foresters: On May 19 about 25 men of the Washington Section of the Society of American Foresters were guests of the Maryland State Board of Forestry on a day's automobile trip through several Maryland counties, ending at the Patapsco State Forest and Park near Baltimore.

The party was led by State Forester Besley assisted by Foresters Pfeiffer, Corbin, and Cope. Major Wood, a member of the Maryland Board of Forestry, also assisted in entertaining the Washington crowd.

The first stop was made on the farm of W. Beale Bowie, a citizen of Maryland, who has placed his extensive woodlot under the management of the Maryland Forestry Board. Active logging operations were being carried on at this place, thus affording opportunity to get acquainted at first hand with the so-called "Maryland Plan" for the management of farm woodlots.

The last stop was on the Patapsco State Forest, where many interesting forestry experiments are being conducted. State Forester Besley and his assistants then served a red-hot, bang-up supper to the crowd as a good climax to a very enjoyable and profitable day.

Department Welfare Booth for Shrine Week: The Department of Agriculture Welfare Association will contribute to the physical comfort of many of the sight-seeing thousands in the city for "Shrine Week" at the refreshment booth which it will maintain on the Department grounds facing Fourteenth Street, and which will be manned or womanned by volunteers from the ranks of the association. Light refreshments will be served from nine of morn to the same hour of the night every day from May 28 to June 9, inclusive. Incidentally, it is expected to turn an honest penny or two of the needed funds for welfare work, for which a drive is in progress. The entire proceeds will be devoted to the continuance and hoped-for extension of Department of Agriculture welfare work.

FOREST PRODUCTS LABORATORY

Senate Forestry Committee Visits Laboratory: The special Senate Forestry Committee recently visited the Laboratory. Col. Greeley was also a member of the party.

The committee watched the big testing machine break a Douglas fir column, saw the paper machine at work, and noted the operations of the tumbling drum at the box lab, besides seeing all the other regular processes of the Laboratory and looking over the special exhibits. Apparently the committee was duly impressed with the extent to which the institution here is doing its share in making the most efficient use of wood. The visit here served as an excellent practical demonstration to supplement the evidence concerning the Laboratory given by Secretary Wallace when he appeared before the committee last winter.

Hardwood Manufacturers' Institute Men Also Visit Laboratory: From 35 to 40 members of the Hardwood Manufacturers' Institute came from their convention in Chicago to look over the Laboratory. This association, although organized less than a year ago, includes 300 of the leading manufacturers of hardwood and cypress lumber and veneer operating in 18 States.

DISTRICT 1 - NORTHERN DISTRICT

Hurrah for the Coeur d'Alene! The Coeur d'Alene Forest, which now leads all others in timber sale receipts, promises to maintain this lead with a good margin. The latest sale is the Burnt Cabin chance, estimated to cut 70,000 M feet, 79 per cent white pine. It has been offered as a five-year contract, cutting 15,000 M feet per year, the limitation under the management plan.

Uncle Sam to Get Railroad

The distinctive feature of the sale was the requirement that 10 miles of railroad, estimated to cost in the neighborhood of $200,000, be built by the purchaser which, with the exception of steel and rolling stock, is to be turned over to the United States at the end of the five-year contract, lock, stock and barrel. All of the timber in the head of the Little North Fork and some additional timber in another drainage will come out over this railroad, which will take at 15,000 M feet per year about fifty years' time.

Naturally, the Forest Service couldn't expect to get a very high price for the stumpage and get a railroad at the same time. However, look at the results! Green white pine was advertised at $4.50 per M feet and the successful bidder offers $11.40. Dead white pine, of which there is about 500,000 feet, was advertised at $2.00 and the bid was $2.25. Other species were advertised and bid in at the following rates: Spruce, $1.00 per M; white fir, larch, Douglas fir and hemlock, 50 cents per M. The total value as advertised was $254,000. The value as bid is $630,175. The difference is $376,175. The average advertised price, all species, was $3.63; the average price bid was $9.00 per M. In addition to this, the purchaser will be required to spend about $1.15 per M for brush disposal and the cutting of diseased trees, mostly hemlock.

The Coeur d'Alene should receive in the next five years from this one sale an average of over $125,000 in receipts. Since the allowed cut for the whole Forest is 50,000 M feet, it will obviously, at these prices, make any other Forest hump to overtake the Coeur d'Alene's lead. The successful bidder was the Ohio Match Company.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Boys' and Girls' Forestry Clubs: The establishment of the first Forestry Club in the United States was accomplished in May, 1922, at Crestone, Colorado, under the direction of W. C. Sauder, County Agricultural Agent, formerly an employee in the Forest Service.

This was a result of conference with State Forester W. J. Morrill and W. H. Freeman, Assistant State Club Leader and the District Office. The ten members of this club entered into the work enthusiastically and two, as a result of local competition, were selected to represent the club at the State Fair and put on a demonstration. This year this club is again active and five or six more are being established in other counties of the State. The opportunity for spreading forestry education through this means is unlimited.

Timber Sale on Arapaho: A resale of approximately 19,000,000 feet of timber on the St. Louis Creek watershed on the Arapaho Forest has recently been made to the Interstate Lumber Company, successors to the Stevens-Barr Lumber & Timber Company, who have been operating in the region for a number of years, at stumpage rates of $3 per thousand feet for green lodgepole pine and Engelmann spruce sawtimber, and $1 per thousand board feet for alpine fir and merchantable dead timber, provision being made for the optional removal of mine prop material.

Forestry Lectures for the School of Mines: Members of the District Office have been cooperating with the Colorado School of Mines in a course of lectures on Forestry given before a class in civil engineering. During the early part of the term the class studied wood technology, the course being confined to those species which are of use in construction in and around mines. During the second part of the term five lectures were given which dealt with the forest conditions of the species concerned, Forest Service methods of lumbering, planting, and fire prevention.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Don't Believe All You Hear: Recent compilation of grazing reconnaissance data for 1,000,000 acres of National Forest range has revealed some startling facts. On the basis of total acres covered the carrying capacity is 85 A. per cow yearlong. Closer scrutiny, however, shows that that cow does not have to lope to graze. Forty per cent of the total area is unavailable for forage due to lack of water, waste areas, etc., and brings the carrying capacity up to the reasonable figure of 50 A. per cow yearlong.

Land Office and Forest Service Exchange Compliments: D-3 recently had occasion to thank the Land Office at Santa Fe for cooperation and to compliment the officers on their businesslike administration. The following is the reply: "I may also say that this office appreciates very greatly the spirit of helpful cooperation that has at all times been manifested by your office, and it shall be our aim at all times to cooperate with you to the fullest extent possible in the disposal of cases over which the Forest Service has jurisdiction."

Tonto Still Has Hopes: The Southern Pacific Company has completed a film of the Apache Trail from Phoenix to Globe, and arrangements are being made to show the wonders of this highway of romance to all the nation. A beautiful and commodious chalet on Roosevelt Lake is soon to be erected for the accommodation of the tourists.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Fire Investigation Board: Plans have been formulated for the appointment of three Fire Investigation Boards, one for the west Idaho Forests, one for east Idaho Forests, and one for Utah. Each board will be composed of three members, the Chief of Operation or other Assistant District Forester, a Supervisor and a Ranger. Alternates for the last two will also be named so that it will be unnecessary for any Supervisor or Ranger to act on fires which occur on their own Forests. This board will consider chiefly Class C fires, looking into their cause and the reason for their assuming such a size, in order to find out where our fire-fighting system breaks down, so that improvement may be made in future cases. They will get out on the area if possible and endeavor to definitely fix the responsibility for the failure to put out the fire while it was small. They will really be called upon to work to all appearances for there is, at the present time, one fire case of last year which is slated for investigation as soon as possible.

Some Forest! It may be noteworthy for a Forest to claim the biggest receipts, the most timber, the biggest acreage, or the largest number of special use permits, or any of the other things for which Forests are famous. The Ashley knows it has reached the hall of fame because people are naming their children for it. In Greendale, Utah, which is a settlement within the Forest, there lives Ashley Forest Swett, who is now nine years old. He was born on the Forest in McKee Draw while his parents were en route from Greendale to Vernal, soon after they first settled at the former place.

Local Mine Props in Demand: An application for 650,000 linear feet of mine props has been received from the Utah Fuel Company. The timber they desire is located on the Manti Forest. It will be advertised just as soon as the necessary estimate and forest description can be prepared.

DISTRICT 5 - CALIFORNIA DISTRICT

Government Heads in San Francisco Organize: For the first time in the history of San Francisco, representatives of nearly every executive department of the Federal Government got together recently in the interest of Governmental efficiency, economy, and cooperation. Thirty-three heads of various Governmental branches, with offices in San Francisco, assembled at the Commercial Club and organized the Federal Business Association. Uniform standards of materials for all departments, cooperative buying, coordination between bureaus and businesslike administration are some of the features which will be taken up by the organization.

Forecaster E. A. Beals of the Weather Bureau, Dean of the Federal Service in San Francisco, acted as chairman, and Commander C. F. Russell, area coordinator, explained the organization of Federal business associations in sixty cities, which cooperate with the bureaus of the budget. Postmaster James Power was chosen president of the organization, and C. L. Snyder of the Civil Service Commission, secretary.

Dr. Jordan Adds His Voice: "I regard the preservation and care of our forests as one of the most vital interests of the United States. To California, in which State the grandest forests lie, the matter is of supreme importance, and I should deeply regret to see the Forest Service in any way crippled or made less effective. I trust that the observance of Forest Protection Week may help educate the public toward useful ends."--David Starr Jordan.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Now Cometh Spring to Nompre Kayenne, who twangeth several twangs on his harp and singeth:

"I see the tourists' sign where'er I go,
The paper plates and tin cans that they sow;
Why can't they keep their dirty junk picked up,
And give the nice green grass a chance to grow?

"Would that some winged Angel 'ere too late
Would with a brick caress his addled pate
Who fails to break his burned match in two,
Also his camp fire quite obliterate."
--F.V.H.

"Siuslaw Lumber Company?" On the Siuslaw National Forest we have a lumber company which cuts National Forest stumpage, the members of which live on National Forest land, cultivate National Forest land, and have their sawmill located on National Forest land. H. H. Cook Company consists of Mr. Cook, his five sons (all reared on National Forest land) and his son-in-law. They have a special use for two acres of land on which their sawmill is located, one-half acre for residence and 7½ acres for cultivation on the Forest in Lincoln County, near Ona, Oregon.--R.S.S.

DISTRICT 7 - EASTERN DISTRICT

Pisgah Furnishing Water for Town: The Secretary recently approved an agreement which gives the town of Marion, North Carolina, the right to use the waters of Macey Creek in McDowell County, North Carolina, for a municipal water supply. This is the third agreement of this character that has been made for water supply from Pisgah Forest during the past 18 months. The total annual rental for the three amounts to $1,500, or the equivalent of 3 per cent on the purchase price of the National Forest lands involved. The Forest Service reserves the right to cut timber from the watersheds. If this does not prove feasible the provision is also made for increasing the annual rental by a yearly sum equal to 3 per cent or 5 per cent of the capital tied up in stumpage.--J.E.S.

Service Bulletin

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RESULTS OF THE HARRISBURG ROAD CONFERENCE

By T. W. Norcross, Washington

At the invitation of Governor Pinchot, a number of States sent representatives to Harrisburg during the latter part of March for discussion of various highway matters. At the end of the meeting the Committee on Conclusions, consisting of Mr. MacDonald, Chief, Bureau of Public Roads, and eight members of State Highway Commissions or Highway Departments, presented a report. The following excerpts from this report are of considerable interest:

Administration

"We ----- urge the State authorities, both executive and legislative, to provide at all times strong engineering control in the administrative and executive work of their State highway departments and engineering supervision of the construction, maintenance and operation of the highway systems. To this end we urge that these departments be removed from political influences, and that continuity of service be preserved for a sufficient period to insure stabilized policies. In no other way is it possible to safeguard and protect the interests of the citizen who is paying for the roads.

"State Highway Departments, with their knowledge of the geography and topography of the States, should determine without legislative or other interference what roads or systems of roads should be constructed and maintained with State funds and should not be governed by legislation as to types and cost of construction.

Finance

"The cost of building and maintaining an adequate system of highways should be distributed equitably among the sources of highway revenue in proportion to the benefits derived from the improvement. ----

"The policy of requiring the user of the roads to pay for the service received through a license and gasoline tax is a sound one, and all revenues from such sources should be applied primarily to the maintenance and reconstruction of highways.

Construction

"The progressive method of construction, whereby the grading, structures and drainage are first completed and the hard surface pavement laid later, is both a practical and at times the most advantageous method of highway construction.

Maintenance

"Unless adequate maintenance is provided for, initial construction of highways should not be undertaken at all.

RESULTS OF THE HARRISBURG ROAD CONFERENCE (Concluded)

Traffic

"Each State highway department should establish a traffic bureau to make a highway transport survey in all its phases to determine present, and forecast future, traffic conditions to assist in the selection of the economic road construction.

"Efforts should be made, in cooperation with motor vehicle officials, to establish as soon as possible uniform motor vehicle laws and regulations, so that the user of the road may travel under uniform laws wherever he goes.

"It is highly desirable that a uniform law be enacted by the States of the Union regulating the dimensions of motor driven vehicles and the wheel load of such vehicles."----

TIMBER RESOURCES IN GREAT WEST

"Standing Timber Resources of the Great West" is the general heading giv to a reprint from the May issue of the WEST COAST LUMBERMAN, which contains nearly 26 pages of reading matter devoted to the activities of the Forest Service in Alaska and the Western States, principally in Washington and Oregon.

Articles on the timber resources of the National Forests in District 6 were written by District Forester Cecil and members of his staff. The timber resources in District 2 were outlined in an article by Assistant District Forester Thompson, and an article on District 4 was contributed by Assistant District Forester Morse. Assistant District Forester Deering of District 5 contributed an article on California's timber, and Assistant District Forester Heintzleman wrote on Alaska's resources. Notes on the timber resources of Montana and Idaho were contributed by the Office of Silviculture at Missoula.

In addition to the many articles, several comprehensive tabulations of ti ber resources also appeared. One of these tabulations follows:

Summary of All Timber Resources of the Great West
(Figures in M bd. ft., i. e., 000, omitted)

	Privately owned	Indians	Forest Service	State, etc.	Total
	M bd. ft.	M bd. ft.	M bd. ft.	M bd. ft.	M bd. ft.
Washington	149,803,895	10,900,000	77,927,000	30,000,000	268,630,895
Oregon	248,916,726	11,863,850	138,547,968	42,000,000	441,328,544
California	174,000,000	2,524,000	*122,930,552	....	299,454,552
Montana	17,501,000	2,510,800	35,818,000	2,307,000	58,136,800
Idaho	30,175,000	437,887	57,003,000	10,500,000	98,115,887
Alaska	70,000,000	....	80,128,000	....	150,128,000
British Columbia	....	....	....	....	366,000,000
Misc. Pub., Ariz., Utah, Colo., etc.	....	....	....	....	69,114,130
Grand total	690,396,621	28,236,537	512,354,520	84,807,000	1,750,908,808

*Includes 26,412,000 M bd. ft. of piling, poles, cordwood, etc.

GRAZING ON THE NEBRASKA PLANTATIONS

It is planned to graze some of the older Nebraska plantations with horses or dehorned cattle as a means of reducing the competition of the ordinary vegetation. This would require some expenditure by the Service in fences and water development or by the stockmen who might be prevailed upon to use the area. The former plan has been decided upon.

GRAZING ON THE NEBRASKA PLANTATIONS (Concluded)

It has also been decided, in connection with ordinary range improvements on the Nebraska, which, up to this time have been constructed entirely by grazing permittees, to incorporate a clause in all future special use permits of this kind, providing for a rental value of a definite amount in case the regular permittee wishes to drop out for a season and allow the use of his improvements by other permittees.

The rental figure amounting to 10 per cent of the original cost of the improvements, 5 per cent for maintenance, and an average of 6 per cent on a depreciation basis of 10 years, appears to be a very fair rate. It amounts to 10¢ per head per month on the Nebraska Forest on the capacity basis of 50 head of cattle per section as against the grazing fee of 15¢ per head per month, a total of 25¢ per head per month. This will remove a good deal of uncertainty as to what a proper charge would be and will also remove a tendency, which has developed in a few cases, of special use permittees overcharging for the use of their improvements.

As an illustration of reviving interest in grazing on the Nebraska Forest, one permittee with thoroughbred stock is making an investment in fences and water development, using steel posts and galvanized wire, which will amount to a cost of 70¢ per head per season over a depreciation period of 15 years. The permittee figures that even with that investment he will better his condition materially, since he has been compelled to spend practically the amount of his original investment each year in supplementing the feed he has been able to raise on his ranch. Going to the Forest for the summer period will enable him to reserve his ranch pasture as well as cut more hay for winter feeding.

CRAFT GETS HIS MONEY

By Paul D. Kelleter, Washington

The tidy sum of $346.71 for Quincy R. Craft was carried in a special bill of relief passed by the last Congress in its closing days and approved by the President.

This action overcomes the decision of the accounting officers of the Treasury, which would have had the effect of taking this sum from Mr. Craft's accumulated savings as a Forest officer, the sum of $346.71 representing a disallowance in the Treasury Department of a disbursement made by Mr. Craft as fiscal officer on regularly authenticated vouchers submitted by a Forest Supervisor covering the construction of buildings on the Nebraska Forest.

The appropriation act for the fiscal year ending June 30, 1918, approved March 4, 1917, raised the building limitation to $1,000. Immediately on the passage of the bill, buildings were constructed, the cost of which exceeded the previous limit of $650 on the principle that the new limitation was immediately in effect and not to be restricted to the fiscal year for which the bill carried appropriations. The auditor and comptroller held differently and so the call was made on Mr. Craft for payment. The injustice is apparent. Had the Supervisor waited until July 1, the expenditure would have been authorized by the Treasury, but being a month sooner it was dead wrong and the situation was created where Mr. Craft was called on to contribute his money to a Government building. Fortunately, Congress has come to the rescue and the payment is made by the Government, the party profiting, and Mr. Craft's patience has brought its reward.

FOREST PRODUCTS LABORATORY

Illustrating the Waning Hardwood Supply: During the last year or two there has frequently been sent to the Forest Products Laboratory a dark reddish brown wood with the request that it be identified. The wood seemed to puzzle mill men and lumber dealers. In one case it was reported as being sold as "swamp walnut." A microscopic examination showed such pieces to be willow.

This rather recent introduction of willow on the lumber market probably is due to the present practice of lumbermen of cutting anything that will make lumber. Hence, unusual species may occur with the more common run of lumber. Some other uncommon kinds of lumber occasionally submitted to the Laboratory for identification are hackberry, planer tree, persimmon, ironwood, sourwood, magnolia, madrona, box elder, honey locust, coffeetree, butternut, slippery elm, incense cedar, Alaska cedar, yew, etc., not to mention numerous foreign species.

Oil from an Automobile Crank Case not Good Preservative: Some earnest saver of waste materials wanted to know "if the application of crude oil or engine oil from the crank of an automobile is of any value in preserving redwood shingles on a roof." We had to advise him that the oil from his crank case would be of no value because it has no toxic properties.

Oat Hulls and Flax Poor Source of Alcohol: Enterprising bootleggers will never use oat hulls or flax straw for producing alcohol. While it is true that a high yield of sugars can be obtained, they are largely what are known as pentose sugars, which can not be fermented to alcohol.

This is another confirmation of the belief by Lab. chemists that most of the cellulosic materials which are counted on by the statistical writers as a source of alcohol are not suitable for this purpose because they produce mostly the unfermentable pentose sugars. Apparently the coniferous woods will be found to be the main source of supply of cellulose for the manufacture of alcohol.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Planting on East Face of Pike's Peak: Planting operations are now in full swing on the east face of Pike's Peak. The trees and equipment were taken to an elevation of about 10,000 feet by the Pike's Peak Cog Road by special train because the regular trains for the tourist season were not operating. From this point they were transported over a wagon road for two miles. It has been impossible to secure a full crew because of the great demand for labor along all construction lines, but at this writing, about 45 men are on the job, and it is hoped to complete the planting, which is the spruce and fir type, by the middle of June.

School Children Wrote Essays on Forest Protection: On many of the Forests of the District during April, school children prepared essays on various phases of forest protection with great credit to themselves. In all the towns in and near the Montezuma Forest the various banks offered $5 as a prize for the best essay written in the schools of that city. On other Forests various prizes were offered in a similar manner. The results fully justified the initiation of this unique feature.

Planting by Boy Scouts: Arrangements have been made for the Denver Boy Scouts to do some planting on the Pike National Forest near their camp, about 5 miles above Silver Plume. The boys will be driven out to the camp in about 80 cars, furnished and driven by members of the Kiwanis Club and the Denver Motor Club. The evening before the planting is to be done, there will be a camp fire program at which an illustrated lecture on forestry, especially planting, will be given by a member of the Forest Service. Although the planting will be done under the supervision of Forest officers, the boys will be divided up into small groups, each one under the supervision of one of the men in the party. Although only a very small number of trees can be used at this time, it is hoped that this work may continue on a larger scale in future years.

The Pipe of Peace was passed around at Cass Lake, Minnesota, recently when District Forester Peck, Assistant District Forest Ranger, and District Engineer Mendenhall and the local Forest officers were entertained by 30 or 40 residents of that town at a dinner in celebration of the recent settlement with the Indians for the land and timber in the Minnesota Forest.

There has in recent years been considerable opposition on the part of representatives of the Indians to the settlement which was proposed by a law passed in 1908 and on which hinged the hope and expectation of making a real National Forest out of the Minnesota. The President on April 9 approved the report of the Commission appointed to appraise the timber, and the Secretary of the Treasury has been requested to make the payment to the Indians, so that the future of the Forest seems to be assured.

The people of Cass Lake and vicinity have apparently made up their minds that this is for the best interests of the community. The dinner took the form of an initiation of the visitors into the Ancient Order of Accredited Lumberjacks, and good feeling generally prevailed.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Bean Beetle Blamed on National Forest: With the idea that the brush surrounding farms, which the Forest Service does not permit settlers to burn promiscuously, is a harboring place for bean beetles, a foothill farmer east of Manzano National Forest attempts, in a column-length story in the Mountainair Independent, to demonstrate that the pinto bean industry was there first and is worth more than the forest anyway. Farmers he contends that used to raise 1,000 to 1,500 pounds of beans to the acre now have to buy what few beans they eat just on account of the Forest Reserve. He recommends that Rangers "while riding leisurely along pull out of the trail and count the bugs under the brush." The newspaper editor saves us, however, by a half column comment that says that "the article is published not with any idea of showing that the National Forests are in any way responsible for the bean beetle, but merely to show how some people will grab at a straw in order to register a kick against something they do not understand and which does not appeal to them." The Bureau of Entomology has been striving to find control methods for the bean beetle in New Mexico and the editor goes on to say, "No doubt the agents of the Government who spent months in this vicinity last summer studying the habits of the bean beetle will be glad to have this article as, as now all they will have to do is to do away with the National Forests, and lo, presto, the bean beetles will disappear by magic."

Forest Service Girls Held Picnic: Twenty of the Forest Service girls located in Albuquerque held a picnic recently in honor of two girls of the District office of Grazing who are to be spring brides. The party went by motor to a grove north of Alameda and enjoyed a picnic supper. The camp fire was thoroughly put out and the picnic grounds were left in neat, orderly condition, as should be done by all trained Forest Service girls.

Early Lumbering: Supervisor Andrews says that Santa Fe Canyon, just east of Santa Fe, probably contains the oldest cutting of western yellow pine stands in existence, and that soon after the Spanish occupation in 1600 round timbers of various sizes were cut for construction purposes and cutting increased from then on to the American occupation of the territory. Sawmills were put in at a very early date, possibly 1850 or thereabouts, and cutting has continued until a few years ago. Now there is an excellent new forest in this canyon. Mr. Andrews points this out as an unparalleled opportunity for gathering growth data on cut-over lands.

Grass Exhibit: Supervisor Wales of the Prescott and his forest force gathered and prepared an excellent collection of southwestern grasses and browses for display at the Northern Arizona State Fair at Prescott. About a dozen or fifteen complete plants of each of the grass specimens were put in a bunch and the bunches attractively arranged on two panels each about 4 x 8 feet. The exhibit drew a great deal of attention. At the close of that fair, it was taken with the other Department of Agriculture exhibit materials to the big fair at Phoenix, where it met with the same success and later was shown at the State Convention of the New Mexico Educational Association in Albuquerque.

Tourist Travel: Recreation figures from the Coconino Bulletin show 10,015 registered visitors at Walnut Canyon National Monument this year as compared with 8,500 in 1921. The Flagstaff City Park entertained 19,616 people as compared with approximately 11,500 last year. At Montezuma Castle 4,800 people registered this year. The total number of visitors to the established camp grounds of the District for 1922 is 81,000. A material increase is expected next year with new camps, new and better roads and natural growth.

Gila Bugs Not Serious: Mr. W. D. Edmonston, of the Bureau of Entomology, after an examination of the insect infected area on Cow Creek on the Gila, reports, according to the Gila Bulletin, that the infestation is not serious. He does not advise any action toward eradication or control at this time.

Cow Celebrated Independence Day: The Coronado has figures that show that between April 13 and September 10, 1922, almost a thousand automobiles were registered at the control station on Mt. Lemmon road. The record is not entirely complete, however, because the pages for two days af heaviest traffic, July 3 and 4, was destroyed by a hungry cow.

How Times Do Change: From Independence, Missouri, to Santa Fe, New Mexico, in the days of the old Santa Fe trail, a man's ration allowance was fifty pounds of flour and fifty of bacon, ten pounds of coffee and twenty of sugar, and a little salt. Beans were sometimes included as a luxury. In these, the days of Forest Service trails and roads, the grub allowance of a man on the end of a shovel or guiding the rooter or road plow, has changed some from those of the bull whacker of the 1830's.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Sound Like Nevada to You? The last legislature authorized the Governor of Nevada to set aside not more than twenty-five game preserves within the State. Governor Scrugham has suggested eight areas within the portion of Nevada in District 4. Three areas are on the Humboldt, three on the Nevada, one on the Moapa division of the Dixie, and one on the edge of the canyon of the Colorado River in no National Forest. These suggested reservations have been submitted to this office for comment. The Governor has also designated the region around Lehman Caves as a State Recreation Ground and has allotted $500 for its improvement. It is hoped to centralize a game reservation in that vicinity and to build up a hatchery for game birds there at some time in the future.

City Park in Logan Canyon: The city of Logan has secured a special use permit for an area in Logan Canyon of the Cache National Forest to be used as a city park. This area adjoins the State Fish Hatchery site.

The citizens of Logan are hard at work this spring planting trees and shrubbery and building a small lake with an island in the middle of it. This lake will later be planted with large spawning trout from the fish hatchery.

Mr. Emil Hansen, landscape architect for the Utah Agricultural College, has laid out the plans and the work is being done under his supervision. Evergreens and black willows are being planted. Public camp grounds adjoin this area and promise to become very popular and one of the beauty spots of this region.

Important Visitors Expected: From a letter recently received in Lands, it appears that Secretary Wallace of the Department of Agriculture and Secretary Work of the Interior Department will come out the early part of June and go over various matters connected with the Yellowstone Park extension in the Jackson Hole country.

Grand Canyon Highway: District Engineer J. P. Martin has returned from the Kaibab, where he inspected work on the Grand Canyon Highway where construction is under way on Le Fevre ridge. About three miles of the new road are completed and another mile is cleared. The new road is sixteen feet wide with five per cent grade most of the way. The old road was narrow and had a grade of twelve per cent and over. On his return he stopped at Red Canyon and inspected the new road location with the idea of changing the line in some places in order to save beautiful trees by the roadside. The new road construction in this canyon will not interfere with travel very much this year, as the old road runs quite a distance from the new line in most places.

Essay Contest Completed: The essay contest staged during Forest Protection Week among the Girl Scouts of Ogden has been completed. While there was not the response we might have wished, quite a number of girls submitted their papers, and six prize winners have been selected. Money for these prizes was furnished by the Forest Service at Ogden.

A Minden Zephyr: The Mono Forest was nearly blown off the map recently by a 75-mile wind that made a total wreck of the Forest Service shop, took the roof off the high school, destroyed three barns, one 400 feet long, and killed six thoroughbred cattle, doing damage altogether to the amount of $50,000. Supervisor Maule says this was the worst wind ever known in that section.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Public Relations on the Snoqualmie: A Forest Service exhibit showing scenes on the National Forests and accentuating fire protection was displayed recently by Supervisor Treen and Ranger Tusler at the Sportsmen's Show in Seattle. The purpose of the Sportsmen's Week was to advertise both to the tourists and to residents the excellent hunting, fishing, and scenery to be found in the State of Washington. Information about these matters was spread mainly through a parade and an excellent exhibit of fish and game. Over 7,000 people attended the exhibit, which is considered a good number, since an admission was charged.

In March the Camp Fire Girls gave an exhibit showing the excellent work of the organization in stimulating interest in outdoor life. Ranger Tusler and Forest Examiner Kellogg decorated a Forest Service corner, getting over Forest protection and recreation by showing scenes on the National Forests and displaying fire slogans and maps.

The work of giving examinations to Seattle Boy Scouts seeking the merit badge in conservation and forestry still progresses. Forty-one of these have been given to date by Supervisors Weigle and Treen.

Maybe So: Ranger Lyman of the Siskiyou received a letter in February addressed "Mr. Lyman, Distrest Forester Ranger." At that, the writer may not have been wrong!

Fire Prevention on the Malheur: Another fire season is soon to be upon us. Ranger Elliott has mailed out letters to all grazing permittees calling attention to their fire fighting and prevention obligations and is arranging for them to handle fires upon certain areas.

Ranger Ray is doing the same except that he has sent different letters to new permittees, old permittees whose cooperation has been satisfactory, and old permittees whose cooperation has not been satisfactory. The Prairie City Stock Association has passed resolutions authorizing Forest officers to call out any member of the association or employees of members of the association to fight fires. Where this is not possible or practicable, the Forest officer is authorized to hire other assistance and forward the bill to the association for payment There was not a single man-caused fire upon Ranger Ray's District last season. Here's one bunch of grazers who are not careless with fire. There are about 44 bands of sheep and 3,500 head of cattle on his district, too.

DISTRICT 7 - EASTERN DISTRICT

Golf on the Pisgah: Application has been made by the citizens of Brevard, North Carolina, for enough land on Davidson River in Pisgah Forest to locate a 9-hole golf course. Perhaps the Pisgah will some day rival the Angeles in variety of special uses.

DISTRICT 8 - ALASKA DISTRICT

Fire Propaganda Gets Good Circulation: The Anchorage District of the Chugach is the only ranger district in the Alaskan National Forests having any fire problem of importance, and during fire protection week Ranger John G. Brady, in charge of the Anchorage district, made considerable hay. The extent to which the press, the business men, and the public generally cooperated speaks well for the work of the Service in that district.

President Harding to Visit Chugach: If present plans mature, the Chugach will be honored with some very distinguished visitors this season, as President Harding, accompanied by three members of the Cabinet, is expected to visit parts of the Forest during June.

Assigned to Chugach: Thomas E. Murray, Forest Ranger, formerly of the Tongass, has been assigned to the Chugach, effective May 1. Mr. Murray has had two seasons' experience in Alaska. Last winter he took the rangers' short course at the Montana School of Forestry.

New Trails to be Built: Half a dozen trail projects will be undertaken on the Chugach this season. Most of them will be for the opening up of mining regions at present more or less inaccessible. A total allotment of $7,300 has been set up for this work.

Application for Timber: Timber sale business on the Chugach is looking up. A tentative application has been received for 100 million feet to be cut from Afognak Island. Supervisor McDonald is making a reconnaissance of the area and if the deal goes through a more intensive cruise will probably be made later in the season.

THE ALASKAN FLEET

(To play safe the author remains anonymous)

Some may prefer to put their trust
In an old "tin Lizzie" that rolls in dust;
But let me to sea, and to windward beat
On the trim craft of the Forest Service Fleet!

First the "Hiawatha," the flagship true,
Leads the Fleet through waters blue,
The stalwart "Tahn," and the "Weepoose,"
These beat any old galloping goose.
There's "Ranger One," and "Ranger Two,"
Cutting along while their engines stew;
And "Ranger Four" and "Ranger Five,"
All good boats for a man alive;
And soon to be added to the galaxy
The brand-new boat, "Ranger Three";
Good staunch craft in a stormy sea
Even down to the "Nellie B."
All of them natty and trim and neat -
Nine good ships of the Forest Service Fleet!

Service Bulletin
U.S. FOREST SERVICE
(Contents Confidential)

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MARYLAND DEMONSTRATES EFFECTIVE COOPERATION WITH THE SMALL TIMBERLAND OWNER

By G.H. Collingwood, Washington

The State Forester of Maryland is teaching forest management and the application of silviculture through the pocketbook. A recent visit to the 40-acre woodlot of W. Beale Bowie, near Largo in Prince Georges County, Maryland, revealed the fact that the forester, the lumberman, and the owner of timberland can all get together upon a common basis of understanding.

Mr. Bowie owns a piece of mixed hardwood land, consisting chiefly of white oak, together with scattered black oak, pin oak, gum, and tulip poplar, growing on rolling land generally loamy clay in character. Through his county agricultural agent he learned of the cooperation which State Forester Besley's office is in a position to give.

On October 19, 1921, a preliminary examination was made by Assistant Forester Karl E. Pfeiffer. The terms under which the State could be of additional help were explained, and afterwards Mr. Pfeiffer prepared a brief report with general recommendations for management. A copy of this, together with a more detailed explanation of the "Maryland Plan" was sent to Mr. Bowie.

Many of the trees were mature and the owner wanted to get some money out of the lot. But he did not want to risk an ungoverned cutting by an ordinary sawmill operator. The plan which had accompanied the report looked good, and he decided to give it a trial. Accordingly, Mr. Corbin was sent from the forester's office to mark those trees which should be taken out. This was on the 15th of March, 1922.

Mr. Corbin's salary was paid by the State, but for this type of work the woodland owner paid the State Forester's office $3.00 per day, together with the cost of all travel and subsistence while he was away from the office. In addition two local men were furnished as helpers. All the trees were marked, tallied, and deduction made for defects. The marking of the trees consisted of a conspicuous blaze at breast height, and another one below the level of the stump, on which was stamped an "M" which served to check the cutting of any unmarked trees. They finished the job in a day, and Mr. Bowie was given an estimate of the amount of timber which should be removed from his lot. The office work was done at the State Forester's office, and the cost to the owner was scarcely more than $10.00.

Ordinarily a description of the lot, and a statement of the volume of lumber to be removed, but with no suggestions as to values, is sent out to a number of mill men, together with the regulations under which the trees are to be cut. The millmen are invited to submit bids, and occasionally some real competition ensues. In this particular case Mr. Bowie let the contract without competitive bids, and received a lump sum of $2,020 for an estimated cut of 200,000 board feet. Inasmuch as all of the cutting is done by the operator this amounts to a stumpage value of a little more than $10 per M.B.M. In addition the owner retains ownership of all tops and limbs. These he is working up into cordwood and selling in the farmyard at $6.50 per standard cord. A liberal estimate for cutting up the tops gives him a profit on his cordwood of at least $3. Under such conditions diameter limits for top lopping or rules for brush disposal are scarcely necessary.

MARYLAND DEMONSTRATES EFFECTIVE COOPERATION WITH THE SMALL TIMBERLAND OWNER (Concluded)

The marking was done on the basis of a selection plan. All mature and overtopping trees were removed, also some smaller ones which were crowding more desirable specimens. In addition, all defective trees were ordered cut, to be used, or not, as the operator pleased. The woods are left in a highly productive condition, with a considerable percentage of the forest canopy left unbroken. Very few trees over 10 inches in diameter are left, but this is due to market conditions rather than any prearranged diameter limit. Apparently the timber operator lives up to the terms of his agreement, and the woods are left in the best possible condition. Of course there is a penalty clause in case he does not do so. Comparatively little damage was done to the remaining tree growth, and small reproduction is given a splendid opportunity to spring up.

This is a case where the State Forester is carrying on effective extension teaching which is helping the woodlot owner to help himself. He is probably getting nearly as much for the woodlot as if he had sold it outright, and he has a good start toward a substantial crop which can be harvested within the next ten years.

THE IDEAL OF FORESTRY

By Ward Shepard - Washington

Among the things that have made the Forest Service what it is, one of the chief is the loyalty of its members. This is well known both inside and outside the organization. Yet this spirit of loyalty - producing sacrifice and devotion, and welding diverse men together into a remarkable community of ideas and purpose - has not, it seems to me, been adequately explained. Many people explain it on the ground of enthusiasm for public service, and to a less degree on the attraction of life and work in mountains and forests. Unquestionably these things are strong factors in many individual choices, but they hardly get to the heart of the question.

The chance for public service, for example, exists in many occupations. Hospitals, courts, legislatures, fire departments, post offices, to name only a few, exist primarily for public service. Many other occupations, such as ranching, engineering, prospecting, seafaring, farming, and the like, give opportunities for a life in the open.

The call of the Service is stronger and deeper than all these. Forestry on a large scale and extending its operations over centuries is a challenge to the best powers of man; it is a call to a higher social development, a more studied, elaborate, and fruitful civilization. For ages men have been emerging from chaos, mental and spiritual; from the disorder of ignorance, sloth, greed, cunning, and waste.

Now work like public forestry is another and striking proof that man can rise to intellectual and moral maturity; to a large conception of sober, ordered, reasoned existence, based on social morality. For public forestry means control of natural forces on a gigantic scale; it means highly organized planning through centuries; it means thought for remote generations and for a civilization of which ours is only the germinating seed. It says to greed, waste, and ignorance, "You shall not enter here." For exploitation, destruction, and future poverty, it substitutes intelligent care and social cooperation.

In these respects, I maintain that public forestry is the type and promise of a new civilization. It takes no visionary to discover the contrast between its aims and social morals and those current in much of the present profit-making organization of the world. And it is in such large conceptions of intelligent purpose that man rises to his true dignity and mental stature. It is not merely that foresters satisfy the every-day need for such an ordinary and unromantic commodity as wood; but that in doing so they reassure us that man can, if only he have a better outlook and a better faith, control his own destiny and build a secure and rational civilization. Forestry is one of those great liberating ideas that capture the imagination. To have a part, however small, in this pioneering toward a better world is, I believe, the chief source of the loyalty and faith of foresters.

TRUE IN GERMANY IN 1817: TRUE IN THE UNITED STATES IN 1923

By C. R. Tillotson - Washington

In the Pennsylvania State Service Letter for May 24, 1923, there appears without comment Cotta's preface to his instructions in silviculture first published in 1817. A part of this is so applicable to present conditions in the United States in so far as I have observed them that I can not help but quote from the article. Does this condition which was long ago recognized by Cotta, and which I believe all will agree is duplicated very largely right here today, indicate that all those who deal with forestry in a broad way have to pass through the stage which he pictured?

> "Our foresters can still be divided into empiricists and scientists; rarely are both united.
>
> "What the former considers sufficient in a forest management is easily learned, and the systematic teachings of the other are soon memorized. But in practice the art of the first stands to a thorough forestry science in the same relation as the quack medicine to the true pharmacopia; and the other often does not know the forest for the many trees. Things look very differently in the forest from what they do in books; the learned man stands therefore, frequently, left by his learning and at the same time without the bold decision of the empiricist.
>
> "Three principal causes exist why forestry is still so backward; first, the long time which wood needs for its development; second, the great variety of sites on which it grows; thirdly, the fact that the forester who practices much writes but little, and he who writes much practices but little.
>
> "The long development period causes that something is considered good and prescribed as such, which is good only for a time, and later becomes detrimental to the forest management. The second fact causes that what many declare good or bad, proves good or bad only in certain places. The third fact brings it about that the best experiences die with the man who made them, and that many entirely one-sided experiences are copied by the merely literary forester so often that they finally stand as articles of faith which nobody dares to gainsay, no matter how one-sided or in error they may be."

"Therandt, Dec. 31, 1816. Heinrich Cotta."

THOSE WHITE TAILED SQUIRRELS

By Will C. Barnes - Washington

Recently Ranger Kintner of the Tusayan sent a beautifully tanned squirrel skin in for identification, believing it might prove to be a Kaibab squirrel although captured on the south side of the Grand Canon, the recognized dividing line between the Abert and Kaibab squirrels. It was identified, however, by the Biological Survey as an Abert (Sciurus aberti). The two are very close in certain characteristic colorings, but the Kaibab shows far more white on the long tail than the Abert.

THOSE WHITE TAILED SQUIRRELS (Concluded)

The Biological Survey reports the latter animal as having been reported from a number of places in New Mexico, the Prieto plateau in the southeastern part of that State, the head of the Mimbres River, in the Mongollan mountains, the San Mateo mountains, and in the Balck Range. Apparently the Abert squirrel is common all over the Yellow pine region of the Southwest, even into Colorado, but the Kaibab squirrel is yet to be discovered elsewhere than on the Kaibab plateau in Northern Arizona where he seems to have been cut off from all migrations by the canon to the south and the impassable deserts of that region on every other side.

BIG EXHIBIT AT COLORADO PAGEANT

An Unusual Opportunity for Exhibits is presented by the Colorado Pageant of Progress, which will be staged at Denver during the first two weeks in July. The Forest Service, D-2, has been offered unlimited space immediately to the right of the entrance. The value of this space is considerably enhanced by the presence of two small cottonwood groves and some rough ground which will lend themselves well to an outdoor scene.

The present plan, which is only tentative, calls for a young forest covering an acre or two to be in charge of a ranger who will camp on the ground. The exhibit will show some representative phases of grazing activities, a small burn surrounded by a fire line, and a plantation. In a rustic cabin, will be housed some miniature exhibits showing some phases of forest management which cannot be shown out of doors owing to the size of the trees necessary.

The Ford automobile factory will be represented on the ground by an exhibit costing some $600,000. This will be near the Forest Service exhibit and presents remarkable opportunities for cooperation since they expect to show a railroad, several small villages and an irrigated farm.

The interest of the Manager of the Pageant of Progress has led him to treat the Forest Service with unusual generosity, donating unrestricted space and helping in every way possible by his influence and personal interest.

WASHINGTON NOTES

New Extension Forester: G. H. Collingwood is now attached to the Forest Service as Extension Specialist in Forestry, having been assigned to this work by the States Relations Service. Mr. Collingwood was formerly a Ranger in District 3, later becoming associated with Cornell University as Extension Specialist in Forestry. Mr. Collingwood's principal duties with the Forest Service will be to deal with State extension directors, heads of forestry departments, and forestry extension specialists as an advisor on forestry subjects and as an expert in forestry extension methods. The importance of Mr. Collingwood's work is easily recognized when it is remembered that one-third of the forest land in the United States is owned by farmers.

Paper Bags Used For Fire Publicity: The Conservation Commission of the State of New York has been successful in putting over some good publicity on fire prevention through the distribution of paper bags on which is printed fire propaganda and rules for campers. These bags are being distributed by the New York State Forestry Association, which organization secured a contribution for the purpose. The idea held by the Conservation Commission of New York was to get a fire warning to picnic parties and other users of the Forests at a time when such parties are actually in the woods.

WASHINGTON NOTES (Concluded)

A Self-Explanatory Letter:

"CENTRAL COMMITTEE ON LUMBER STANDARDS
International Building,
Washington, D. C.

May 21, 1923.

"Hon. Henry C. Wallace,
Secretary of Agriculture,
Department of Agriculture,
Washington, D. C.

"My dear Mr. Secretary:

"In behalf of the producers, distributors and consumers of lumber represented through the Central Committee on Lumber Standards in an effort to formulate standards that will promote maximum economy and convenience in the manufacture, distribution and utilization of lumber, may I express grateful appreciation of the services of the Forest Products Laboratory at recent national conferences held in Chicago, May 10 - 16.

"No important constructive undertaking in American industry has ever at any time received more timely or more practical technical assistance from the Government than has the lumber industry, through the Forest Service and the Forest Products Laboratory.

Yours truly,

(Signed) Wilson Compton,
Chairman, Consulting Committee."

FOREST PRODUCTS LABORATORY

Larch Baking Powder Biscuits: Most tempting, beautifully browned biscuits on exhibition at the Lab. during the visit of the Senate Forestry Committee aroused much interest. This was increased when it was learned that the mucic acid used for the manufacture of the baking powder came from larch butts.

Large Attendance At May Instructional Courses: Sixty men, the greatest number assembled at one time for the Laboratory instructional courses, were enrolled as follows for the May series: kiln drying, 19; boxing and crating, 17; glue, 16; salesman, 8.

Like their predecessors, these men came from various portions of the United States and represented many industries.

Getting More and More Alcohol: Just soaking wood for an hour in a four per cent solution of sodium carbonate before distillation gave an average increase of over 30 per cent in methyl alcohol yields, it was learned in recent experiments. The Lab. is continually adding to its stock of alcohol; stock of information, we mean.

Yellow Cabs Have All-Wood Bodies: Is steel superseding wood in the manufacture of auto bodies? Possibly with some makes, but the superintendent of body construction for the Yellow Cab Manufacturing Company thinks wood construction is far better. "The all-steel body," he said, in an article in the Hardwood Record, "does not compare with the all-wood construction - not the way we use it. All-steel has a number of good arguments against it. First, it can't compare with all-wood construction in the ease and speed with which repairs can be made. There is where the whole secret lies. The steel car, when it is damaged, must be repaired by welding in the new parts, and this is a slow process, requiring the better part of a day or longer to accomplish. With our wood construction we can make repairs in

FOREST PRODUCTS LABORATORY (Concluded)

much less time......There are other reasons, too, why wood is preferred. An all-metal car rusts - say what you will - which adds much to repairs and upkeep. A metal car is also full of "drum," vibration, a disadvantage not to be found in a wooden car."

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Rains Improve Ranges: Recent rains have taken place throughout the District and there are excellent prospects for a good crop of grass, at least, during the early part of the season.

Those who think they know something about the cattle industry are prophesying a pretty fair market this fall, particularly on feeders, on account of the good year that the feeders have had. Most of them have made some money on their ventures during the past winter.

Grazing Inspectors Rachford of the Washington Office and Douglas of the District Office are out on schedule of conference of the Forest Supervisors on range appraisal, which will keep them engaged about a month in this District.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Probably some of Bunyan's Men: It is reported that archaeologists digging around in the Grand Canyon of the Colorado have found the petrified bodies of two men eleven feet in height. These giant human beings are said to be of proportions similar to those of the people of today. Speculations are rife with scientists concerning the time when such mighty men lived in Arizona, but what is more natural than that a couple of Bunyan's loggers should have gone down the river when Paul attempted a drive on one of the upper forks of the Colorado? In that event there is no question concerning the period of their living. It was contemporaneous with the formation of the Petrified Forest which, according to Quincy Randles' story in the April number of the Forest Pioneer, occurred when the mud-covered logs were driven out of the Puerco onto the flats south of Holbrook for want of sufficient water to float the big season's cut.

Good Advice: Supervisor Arthur regards poor tools as worse than none and in the Lincoln Bulletin admonishes rangers not to depend on worn-out stuff. "Round up your old property," says the paragraph, "and have it in shape so that when an officer who has the power to condemn property is on your District, he can clean it up. Don't be charged with any old, worn-out stuff, as it looks from the Supervisor's Office that you have equipment when you really have worse than none. If you have no equipment you will not depend on it and have it fail you. Condemn it. The Supervisor's Office cannot get new equipment like it should be able to get as long as the records are cluttered with old junk that looks like equipment on paper. When a tool becomes worn out it is cast aside and if it is not condemned immediately, it will likely be lost and then someone, usually the fellow charged with it, pays. All equipment in serviceable condition should be the aim of every Ranger and the Property Custodian will be of all assistance possible.

Ranger Erickson a Veteran: Ranger Neil Erickson, now custodian of the Walnut Canyon National Monument on the Coconino, has a long record of service to his credit. Prior to his transfer to the Coconino Erickson was a ranger for almost eighteen years on the Chiricahua-Coronado. During that time he worked under six different supervisors.

Second V. P. Scout Council: Supervisor Calkins of the Coronado has been chosen Second Vice President of the Catalina Council of the Boy Scouts of

America. Camp Lawton, the Scout outing place on the Coronado National Forest, has been made the model scout camp for the state by the Arizona Boy Scout Conference.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Girl Scouts Get Instructions: The Girl Scouts of Ogden and vicinity recently held a training school in Ogden Canyon. F. S. Baker gave the girls instructions on how to know the trees, how to build camp fires that will not burn up the Forests, especially how to put them out, and how to draw maps.

No Loss Without Some Gain: The late spring which everybody is cursing is not without some favorable aspects.

"Johnny" Raphael who has recently returned from the arid State of Nevada says that the cool weather and numerous storms are holding back the melting of the snow most excellently. These snows were lighter than usual and if spring had come on normally, the water would be all gone before it was time to use it for some of the crops. Farmers depending upon irrigation are therefore favored by the late spring. It also promises to make the spring range last well through the season and not dry up early in the year as is sometimes the case.

While not due to the late spring, Mr. Raphael also reports an improvement in the gold mining industry in the State of Nevada, and states that a new gold strike on the Santa Rosa Division of the Humboldt National Forest is causing considerable excitement."

Red Cedar Chests Made by School: The Industrial Department of the Ogden Central Junior High School recently staged an exhibition, the feature of which was an extremely beautiful clothes chest made of the native red cedar (Juniperus Scopulorum). The wood for this chest was obtained near Ogden from a remarkably large juniper (in this particular region). The wood was of a deeper red than is seen in the chests made of eastern red cedar, and was more beautifully varigated and mottled.

DISTRICT 5 - CALIFORNIA DISTRICT

Siskiyou County Declares War on Incendiaries: A splendid address made by Supervisor Tom West of the Klamath before a meeting of the Associated Chambers of Commerce of Siskiyou County at Montague, evidently aroused these representative citizens to a sense of the dangers that are threatening them if the depletion of the forests is not promptly curbed. Mr. West presented startling facts and figures to show that the sword of Damocles, in the shape of a timber famine, is hanging over our heads, and that the incendiary and the careless or malicious camper is doing his best to cut the slender thread by which it is suspended. As a result of this plea for the forests resolutions were adopted endorsing and commending the work of the Forest Service, and recommending that copies of the resolutions be published and a committee appointed "to do all within its power to advise the people of the County of the necessity of care to prevent fires."

A few days later the committee held an earnest and enthusiastic meeting in Mr. West's office to formulate plans for this campaign. A remarkably thorough and comprehensive plan of action was mapped out, which aims at enlisting the support of every citizen in the county, and in which the Service will of course participate to the extent of its powers.

A Quiet Sunday: The following is a copy of a note written by Scaler Charles Bloom of the Eldorado:

"Sunday, May 13. - This is the end of a perfect day. Scaled the usual amount of logs. On looking over the sale area shortly after noon discovered a family of rattlesnakes; killed 26 all by myself and saw lots more which am going to work on tomorrow. Expect to do better then, as I will take a few necessary implements of war with me. Had a very nice fire close to Government land this evening which furnished amusement for awhile. Hope to see you soon. 'Unclassified - 8 hours.'"

New Forest Service Camp on Lake Tahoe: The Board of Supervisors of Eldorado County recently purchased 66 acres of land on the shore of Lake Tahoe in order to secure a right of way for the State highway. The land in excess of the needs for this purpose, with a shore line of a quarter of a mile, will be turned over to the Forest Service to be used for a public camp ground. This area is situated next to the summer resort of Al Tahoe, and in case the plans go through will mean that at last we will have a camp ground on the Eldorado side of Lake Tahoe with a decent shore line on the lake itself.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Stock Associations Hold Meetings: Sixteen stock association meetings have been held on the Whitman Forest during the past two months, with the District Ranger and at least one member of the Supervisor's office present at each. Supervisors Ramsdell and Irwin feel well qualified for membership in the circuit riders' club, particularly after trips to the various John Day and Burnt River Associations.

Probably the banner meeting was with the Pine Valley Association at Halfway, with all officers and a total of 33 members present. About 50 permittees graze 4500 head of cattle on this range. With applications for 6327 head it is no small task to figure equitable allotments and, in turn, to supervise such a range. Ask Ranger Foreman.

The Whitman is pleased to announce a cut of 2010 C. & H. and 16,400 S. & G. for the 1923 season, besides a two weeks' reduction in season for about 60% of all stock. In fact we anticipate a display of real grass in the mountains after the middle of summer in another year or two, and those wishing to take pack trips will not be asked to include baled hay with their supplies. At the same time, we aspire to turn off some first-class beef and mutton.

Mattson Resigns. Another oldtimer is leaving the Whitman. Frank Mattson worked under appointment as Guard in 1910 and has been on the Forest almost continuously since that time as District Ranger, and later as Scaler. He has been rated as one of the best scalers in D-6. Mattson has gone to Illinois, where he will probably realize an ambition of several years to operate a chicken ranch along scientific lines.

That Malheur Sale. The Whitman force is mighty tickled to see the big Malheur sale bid in at $2.80, even if it does mean that our neighbor to the south will soon be showing us up in the timber business. It is going to make sales administration a lot easier with us after the trouble brewing over the slicing of six bits from the appraised price. Best of all, it vindicates the appraisal work of the logging engineers.

I had six honest, serving men;
(They taught me all I knew)
Their names are WHAT and WHY and WHEN,
And HOW and WHERE and WHO.
--Kipling.

Service Bulletin

U. S. FOREST SERVICE

(Contents Confidential)

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EXTRAORDINARY ANNOUNCEMENT!!!

In the logging-camps of North America, strange legends are told of Paul Bunyan; of his huge size and daring, of his physical prowess, of his heroic and magnificent deeds, and of his famous Blue Ox that measured eleven axe-handles between the horns. These legends have always been regarded as myths, invented by lumberjacks to while away long winter evenings.

But recently an adventurous Ranger scaled the heights of Mt. McKinley and discovered some curious old documents from which it is possible to determine not only that Paul Bunyan actually existed, but that he worked for many years in the Forest Service. It has been decided to piece together these fragments, interpret them, and give them to the world.

By a rare good stroke of fortune and $1,000,000 the SERVICE BULLETIN secured the serial rights to these Paul Bunyan yarns, which by the way were written on the first paper pulp ever made. This issue contains the first chapter. The others will appear in successive issues. Order from your newsdealer today. Better yet, obey that impulse and send in your subscription (pine needles not accepted) to the nearest P. R. office.

PAUL BUNYAN - TALES OF HIS EXPLOITS

Chapter I.

Bunyan Was The First Ranger

It is not generally known that Paul Bunyan was the first Ranger. That was long, long ago when the Forest Service was a small bureau in the Department of the Exterior. Paul's district was proportionate to his great size, being over 298 billion square axe-handles in area, and embracing in its northwestern extremity the present Chugach and Tongass Forests in Alaska. Here he had his summer headquarters; but as winter approached he rode south on his Blue Ox along the main crest of the Rockies, thence easterly to the mouth of Sour Dough Creek (later dubbed the Mississippi), where he had a winter camp.

[To be continued]

BRAZILIAN LUMBER MARKET LOST TO AMERICA

By Joe Kircher, D-3

In spite of the fact that Brazil has vast virgin forests it has been a large purchaser of American pine. Before the European war Brazil was purchasing lumber from the United States at the rate of 60,000 M feet per year. This lumber was practically all southern yellow pine (mostly longleaf) and eastern white pine, both of which were used largely for constructive purposes.

The reason why this lumber could compete with the native species was because the Brazilian lumber industry had never been well organized, was very small, and could not supply the demand. The Brazilian, who is fundamentally a landowner but not a manufacturer, probably preferred to buy his lumber from foreigners rather than to run the chances of losing money in cutting lumber, an operation of which he knew very little.

BRAZILIAN LUMBER MARKET LOST TO AMERICA (Concluded)

The European war, however, changed everything. The American supply of lumber was practically cut off and the price of lumber in Brazilian markets soared. Lumbering, therefore, became exceedingly profitable. Existing mills started to cut to capacity, and new mills sprang up. Slowly the native lumber replaced that which had formerly been imported.

At the close of the war when American lumbermen tried again to sell to Brazil they found that they could not do so. They now had considerably more competition from native species, and exports from the United States to Brazil in 1921 fell to about 10,000 M feet. While the 1922 figures are not available, lumbermen say that they are considerably smaller, and during 1923 Brazilian lumber dealers state that they will purchase practically no American pine.

Much of the Brazilian market for American lumber has been taken by Parana pine which, though inferior in quality, can be purchased in the Rio market for about $55. per thousand, while American pine cannot be laid down for much less than $100 per thousand. In the Sao Paulo market, probably the largest in Brazil, American pine is still higher and Parana pine cheaper.

To add to the difficulty of American exporters the milreis, which before the war stood at about 3-1/2 to the dollar, has now fallen to 9-1/2 per dollar. Should the milreis again rise, American lumber will become correspondingly cheaper. Notwithstanding it is hardly believed possible that American lumber can again secure the market which it enjoyed before the war. Undoubtedly should it again enter into active competition with native lumber the Brazilian Government would raise import duties to a point high enough to protect the local lumber industry.

After a review of the situation it is believed that the Brazilian lumber market is forever lost to American lumbermen. Small quantities for special purposes will probably always be imported, but the importation of large quantities cannot be looked for.

This is a calamity from the viewpoint of the individual lumberman who used to sell much of his product to Brazil, since he must now look for new markets. But from a broad economic viewpoint may this not be a blessing for the United States? It is known that we are cutting our timber four times as fast as it grows. If some of our present markets are lost to us it would naturally retard cutting and make the supply last longer.

The quantity annually sold to Brazil before the war was not large compared with the total lumber cut of the United States, yet every little saved for the future will help when the pinch comes.

Is it not rather comical to think of the United States sending a lot of lumber to Brazil now, only to be buying from the same country some fifty years from now?

AUTO TRUCK HELPS IN FIRE FIGHTING

By R. G. Schreck, Michigan.

We have had two occasions to experiment with the Graham Bros. truck on two large fires on the Michigan so far this season, and both times the truck proved of great value.

On May 4 a large fire occurred near Loud Dam. A strong gale was blowing from the northeast at the time which drove the fire south onto the Forest at a remarkable rate. Ranger Groesbeck with twenty men immediately left for the fire, and, in spite of the high wind and the rate the fire was traveling, succeeded in heading the fire off by plowing furrows and backfiring. The truck did very effective work in the quick transportation of men and being ready for plowing furrows on arrival. Traveling at the rate of five miles per hour, a furrow was thrown around the head of the fire and almost the entire crew of men followed with torches setting back fires.

It is the first time in my experience that I have seen a fire checked on the sand plains during the day when such a strong gale was blowing. If the truck had not been on the job there is little doubt but what the fire would have burned almost across the Tawas District, since it would have been impossible to get teams and plows on the job in time to prevent the fire obtaining large proportions.

AUTO TRUCK HELPS IN FIRE FIGHTING (Concluded)

On May 5 another fire started near Sand Lake, outside the Forest. The fire was spreading rapidly and endangering a large resort at Sand Lake. The State Fire Warden was informed and Ranger Groesbeck was advised to take the truck and what men he had available and assist the State in checking this fire. Here again the truck did very effective work in taking the hazardous part of the fire area and with only a handful of men checking the fire with one furrow and backfiring; thus saving the cottages and resort on the Lake and preventing the complete ruination of the lake for future resort business.

We are surely more than pleased with the truck and the work it has accomplished, and I am in hopes that some time in the near future that each District can be supplied with similar equipment.

SOUTHERN PINE - IN THE WAKE OF THE BOLL-WEEVIL

The boll-weevil's advance in 1920 and 1921 into large areas of the cotton-growing sections of the lower Piedmont region from the Carolinas to Alabama resulted in paralyzing farming and, in its stead, developing an extensive timber industry. In scores of counties in middle South Carolina and middle Georgia the humming of sawmills, the chugging of motor trucks of many kinds and sizes hauling 60-day seasoned lumber over country roads, and the purring of planing mills located up and down the railroads characterize practically the only industry.

"It is timber that kept us from starvation," said an oldtimer. "Timber is what's keepin' us together," said a rural store-keeper. "Our business wouldn't a counted fer nothin' if it want fer this lumber proposition," said a general merchant in a county seat town.

The whole industry, with occasional exceptions, is being run by men green in the business - former farmers and farm laborers, the latter mostly negroes, of course. The great exodus to the North of negroes (mostly men adults) since 1921 has taken North over 50 per cent of the farm hands, and the remainder are mostly in the woods and at the mills where they are contented with $1.25 to $1.75 per day in cash paid every two weeks for 10 to 11-1/2 hours hard work five or six days in the week.

Unwise cutting and waste are everywhere - high stumps and large tops left in the woods, big slab piles, and careless sawing resulting in huge shaving piles at the planing mills. What's more, between the almost complete lack of knowledge of timber values on the part of the farm owners - mostly men and women living in town who have tenanted their lands to negroes and have little knowledge of them in detail - and the prevailing high values of pine timber loaded on the cars, the big operators handling 95 per cent of the business are making large "clean-ups" in profits. Or, in the mild words of Judge Purdy of Sumter, South Carolina, "the vigilant stinger wipes up the sluggish owner."

It used to be this way years ago, and one wonders if somehow it always must be that the farmer - the grower of the timber crop -- is to get but a very small fraction of what his marketable commodity is worth, while the shrewd and not infrequently unscrupulous buyer and operator piles up large profits. It is wrong and the injustice of it all should stir the State and Federal forces to effective action. In probably no other line is the farmer so badly beaten out of his rightful income.

High stumps were mentioned as one form of waste. Accompanied by County Agent Drexel, the writer recently measured a random acre in a representative cutting of shortleaf and loblolly pines in McDuffie County, 30 miles west of Augusta, Georgia. Seventy-two trees had been cut, leaving stumps measuring mostly from 12 to 20 inches in diameter inside bark (with a few up to 30 inches), and from 19 to 29 inches in height. The average stump was about 25 inches in height and contained 16 board feet above a height of 12 inches from the ground, or a total volume of 1152 board feet per acre. The purchaser, thus, had gone away leaving the choicest and most valuable timber to waste - and more than a thousand feet of it per acre, worth to him not less than $10 a thousand feet! That would have paid for three-fourths of the logging cost, or as one man put it, have "bought the land about three times over."

The woods sawyers in parts of the South have little by little been brought to bend their backs and cut low stumps. The local assertion of the operators that the negroes cannot be made to cut low stumps is only an alibi for the fact that the operators are making such extravagant profits that a possible saving of this sort is considered not worth bothering about. The same wastefulness applies to the various other timber operations.

Only slight concern is shown in regard to fire by the negroes and native white "crackers." In the towns and cities there is a latent and rapidly growing public sentiment by the more progressive business men that the curse of burning must be stopped. The law is there on the books - it is a matter of changing the public attitude toward its enforcement. The high value of standing timber is working effectively toward keeping out fire - because it pays.

BAD FIRE IN MASSACHUSETTS

The Cape Cod region of Massachusetts was the scene of a bad forest fire recently which burned over an area of more than 15,000 acres. State Fire Warden Hutchins characterized the fire as the worst individual fire that Massachusetts has had in years.

The growth burned was mostly scrub oak and pitch pine. The big obstacle the authorities had to contend with was the back-firing by natives who stick to the old methods of fire fighting despite efforts to convert them to more modern plans. Being so near Boston the fire attracted more than ordinary attention.

WASHINGTON NOTES

Mr. Joseph C. Kircher of District 3 has returned from Rio de Janeiro, where he represented the Forest Service at the Brazilian Centennial Exposition. Mr. Kircher was in Brazil for nine months and while there learned many interesting things concerning the Brazilian lumber industry. One of his articles is appearing in this issue of the SERVICE BULLETIN. Mr. Kircher is again on duty at D-3 headquarters.

Some Good P. R. Work. - District 2 furnished nearly all of the vacation and recreation material published in the annual recreation issue of the Pueblo, Colorado, Chieftain. Maps, pictures, and reading matter were combined to make an exceptionally attractive layout. Many good articles were also published in a recent issue of the Rocky Mountain News.

Mattoon Studies Conditions in South: Mr. W. R. Mattoon of Forest Management has returned from Georgia and South Carolina where he was engaged in forestry extension work in six counties.

Lots of Authors in the U. S. F. S. Have Forest Service folks been active recently in spreading the good word to all those who would read? Most emphatically yes! Listen to this: In the June 6 issue of the OFFICIAL RECORD under the heading "Articles in Current Publications by Department Workers" 27 articles were mentioned, 16 of which were written by Forest Service people. That 16 represents 60 per cent. Not so bad for one bureau out of the entire Department. Why not keep the pot boiling?

South Carolina Women Active in Forestry.--To paraphrase a great educator: "What you would have in the State you must first put into the -- women's clubs. As a result of the conference called by the Governor in October, the formation of a State Forestry Association, and the cooperation of the State Federation of Women's Clubs with the Forest Service representative sent to the State on the Governor's invitation last winter, a resolution endorsing forestry and forestry legislation for the State, presented to the annual convention of the

Federation in April, was unanimously adopted by that representative and influential body. The State Farm Woman's Council is now in correspondence with the Forest Service, looking toward cooperation, which seems to indicate that the women of the State are to play the game to a finish. D-S-E

TREE MANUALS ARE WELL RECEIVED

W. R. Mattoon, engaged in farm forestry extension work under Forest Management, has received a great many commendations by reason of his work in the preparation of popular forest tree manuals published by the State Forestry Departments of Virginia, Maryland, North Carolina, and Tennessee, by the State Department of Education for Delaware, and by the American Forestry Association for the District of Columbia.

The manuals contain descriptive texts of the more common forest trees and are attractively illustrated by cuts, mostly from original drawings by Mrs. Annie Hoyle of Engineering, who has won considerable honor heretofore as an artist.

A manual is expected soon for Kentucky, published by the State Department of Agriculture, and others are in preparation for South Carolina and Georgia to be published in each case by the Agricultural Extension Services of the State Colleges of Agriculture.

FOREST PRODUCTS LABORATORY

Sunken Logs Being Raised: Timber mining is generally a term of reproach, but under certain circumstances it may instead be one which the most ardent conservationist could use in praise. A latter-day timber-mining business is that of raising sunken logs, and recent correspondence indicates that at least one Wisconsin firm expects to obtain timber by reclaiming such material.

Without doubt there are many millions of sound white pine logs in the log-driven streams of the Lake States. Other huge quantities of pine are in southern streams; one stream alone is estimated to contain over four billion feet. Much of this timber may finally find its way to market; it is known that one mill already gets a large share of its output of 50,000 a day from this source.

What is D&CM, or ECM, or E&CB1S? What are the abbreviations of the ordinary terms used by the lumber industry? We probably know what S4S means or Sel. or T&G, but could we tell what Shlp. calls for or what is wanted when ESM or S2S&M appear in the specifications?

These terms and 150 or more others are defined in Technical Note 192, Standard Abbreviations, which has just been issued by the Laboratory. This publication has aroused much interest in the lumber trade and several requests for large quantities of it have been received.

DISTRICT 1 - NORTHERN DISTRICT

Important Meeting of Montana Lumbermen and Foresters: Last week witnessed so far as is known the first congregation of lumbermen and foresters of Montana for the purpose of discussing Montana Forestry problems.

The meeting was attended by prominent lumbermen from the Kalispell and Missoula regions, representatives from the Forest Service, members of the Montana Forest School, the State Forester and E. T. Allen of the Western Forestry & Conservation Association. It lasted a day and a half, and some of the subjects discussed were Forest taxation, possible by-products from Montana's lumber industry, Montana Forest Economics, State Legislation and the National Forestry situation. Out of the meeting grew a Forest Policy Committee in which are represented the Forest Protective Associations and Lumber Manufacturing Associations of the State, the University and the State Forester, and the Forest Service, also a committee representing these agencies for the purpose of carrying on necessary informational work along Forestry lines.

While the attendance was not large, all the big stumpage owners of the State were represented, and the standing committees are placed in good condition to do effective work for the future.

White Pine Prices Way Up: The Coeur d'Alene Forest is still getting record prices for white pine. A recent small sale of 56 M. feet was made at the rate of $14.25 per M. Another recent sale of one million feet of white pine brought $9.50.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Insect Control Operations have been initiated on the San Isabel Forest, this work to be done largely on the Greenhorn District. A year ago we had what appeared to be about the most serious infestation that we have had in the District in recent years, as many as 45 trees being killed in one group. It appears, however, that the damage is decreasing since the largest number of trees found killed this spring, in one group, is only 13. With the effective control work which is being undertaken, the infestation should be reduced to normal this year.

The Delta County Livestock Association recently held its annual meeting at Delta with a representative attendance of various livestock interests. That section of Colorado is probably in worse condition, from the livestock standpoint, than any other in the State, due to the fact that a good many stockmen have farms and last year made pretty heavy investments in the growing of potatoes. There was practically no market for them and a great many undertook to feed them to cattle as a partial substitute for hay, which was a short crop last year. A great many car loads of potatoes were fed out in this way which cost the feeders 5¢ to 10¢ per cwt. Incidentally, they found that potatoes made a very good substitute for hay and the cattle did well on them with one feeding of hay per day. The range, fruit and crop prospects, so far, are good in that locality for 1923.

DISTRICT 3 - SOUTHWESTERN DISTRICT

More Than Twice as Many: Ancient document discloses that Gila payroll had many more names in early days than now. A circular dated July 1, 1910, which has just been brought to light from the closed files according to the Gila Bulletin shows the forest organization as having at that time 29 members. W.H.B. Kent was Supervisor and Henry Woodrow was a Forest Guard. The supervisor's staff consisted of three men. There were three clerks, three rangers, nine assistant rangers, two forest guards, one laborer, one janitress and six field assistants. The present permanent force of the Gila numbers eleven persons.

Secretary's Visit Shown in Film: When Secretary Wallace visited Tucson, Arizona, during his southwestern trip, an honorary degree was bestowed upon him by the University of Arizona. The ceremony was filmed by a local motion picture photographer and the film has just been released. In addition to being shown in a motion picture house in Tucson it is expected that it will be included in some one of the national weekly news reels.

New Stunt in Lightning: One evening last year Ranger Brown of the Coconine had a lightning storm. It was too late to detect any smokes but he was satisfied that the storm had set a good many fires. So he saddled up and arranged for 20 men to be on deck at appointed places bright and early next morning. And next morning there were 20 fires reported. All were held down to Class A as to a result of this well-timed and well-judged precaution.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Photography As She Is Pictured: A short time ago we received a bunch of very fine pictures from the Uinta. One of them, according to the description, represented Nebo Ranger Station. The picture, however, showed two very good looking young ladies on horseback, no Ranger Station being visible. Maybe this was a mistake in describing the picture, and maybe it was another case of a peculiar thing we find in our photographic work. No matter what a picture really shows, we try to get an official sounding title for it. Don't be afraid of taking pictures of pretty girls on horseback and calling the picture by its right title. You are supposed to take technical pictures of all kinds, and these really fall into the class of technical PR pictures. Consider their usefulness. Such pictures are fine for recreational talks when made into lantern slides. They lend a human touch to newspaper and magazine articles, and they make an excellent opening wedge for more serious pictures. While a man is hypnotized by the beautiful ladies you can soak him with a picture showing good brush disposal, erosion, or almost anything else, and catch him while he is still under the spell.

Payette Ranger Meeting: The Payette Ranger meeting held recently at Cascade was a very successful meeting and the results were so gratifying that it is hoped this will prove to be only the first of many similar meetings on other Forests. The first day was spent in the office in a general analysis of problems connected with fire and with grazing administration. The second day the Rangers were in the field. On the third day the entire party went into the west side timber where a sample plot was marked and estimated in the typical mixed stand of Douglas fir, larch, lowland fir, western yellow pine and Engelman spruce found in these mountains. The chief problem discussed was the removal of the white fir, especially unmerchantable and diseased trees. On the fourth day they layed out a sample plot in lodgepole pine in Big Creek.

DISTRICT 5 - CALIFORNIA DISTRICT

KING IN ALL BUT NAME

Ranger Price of the Sierra fills perhaps one of the most unique District Ranger jobs in the Service. His territory, the Pineridge District, has only 113,000 acres, but he has a volume of business that makes up for the difference. His headquarters is in the town of Big Creek, a year-round Special Use town of from 1500 to 2500 inhabitants. The town has department stores, pool halls, butcher shop, hotels, garages, art shop, lumber yard, school and power houses. In fact, it's a live town with all the frills. It has street lights, sewer and water system. The school has four teachers and about 100 pupils. It is the headquarters for the construction work of the Southern California Edison's Big Creek Project, on which about $15,000,000 is spent annually. A railroad runs through the District, the terminus being at Big Creek. There are five sawmills operating on Government timber, beside the large amount cut by the Power Company for construction purposes. Beside the Special Uses at Big Creek, Price handles the Huntington Lake recreational area, which has about 400 summer homes, four resorts, one sawmill, boat houses, Steele Normal School and three large public camps. Travel to this area is so heavy that at times Price has to put on a control between Big Creek and Huntington Lake. The Methodist Conference has a Special Use for a Chautauqua, where they entertain thousands of people every summer. Price is the Mayor and autocrat of this domain, and is called upon to settle all the ills of his people.

NEW MUNICIPAL CAMP FOR ANGELENOS

The Los Angeles Playground Department has applied for a permit for a 200-acre Municipal Camp near Mammoth on the Inyo Forest, making the fourth camp established by Los Angeles - 2 on the Angeles and one on Catalina

Island. Incidentally this Inyo Forest Camp will be over 300 miles from Los Angeles, thus showing that in D-5 at least distance from a National Forest doesn't cut much figure when a municipality wants a good camp site.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Technical Assistants Hold Successful Conference at Portland. Called together by District Forester Cecil, the technical assistants from the 22 National Forests of Oregon and Washington, held a successful 4-day conference in Portland, April 2-5, 1923, the first meeting of its kind ever held in the District, if not in the United States.

In his opening remarks the District Forester welcomed the men and expressed his appreciation of the work they are doing in the District. The program for the four days was devoted to the consideration of technical forestry problems, each member of the conference leading in the discussion of one or more of the topics, which included the Wind River Experiment Station, planting, tree diseases, insect epidemics, timber surveys, management plans, appraisals, yellow pine and Douglas fir silviculture, National Forest policy and minimum silvicultural requirements, and record of cut-over areas. The last day was devoted to land exchange topics.

Valuable as the more formal sessions of the conference were, it is believed that the best result of the conference came from the opportunity it offered for the men from different parts of the District to rub shoulders and get better acquainted, see one another's problems, and realize the magnitude of the work on which they are engaged. How seriously the men take their work was shown by reading between the lines in the meeting when each member of the conference told his ideas of the technical man's place in the Forest organization.

It is believed that occasional meetings of this sort will do much to awaken the zeal for service of the old fighting days, and develop an esprit de corps that will carry forestry successfully through the all important period during which the privately-owned timberlands are being brought under scientific management.

DISTRICT 8 - ALASKA DISTRICT

A New Forest Service Activity: On May 14 while the Forest Service Launch "Weepoose" was provisioning at Juneau, the Prohibition Enforcement Officer for Alaska, Mr. A. G. Means, was granted permission by District Forester Flory to use the launch in catching a liquor boat due to arrive that night. Under command of Captain Ed. Thompson and with the P.E.O.'s on board, the Weepoose left for the entrance of Gastineau Channel during the evening, and there spent a long, tiresome night lying in wait for the expected "rum-runner."

Before dawn the "Daisy" hove in sight towing a skiff, which was immediately cut loose as soon as the "Weepoose" searchlight was turned on her. After boarding the "Daisy," the skiff was recovered and found to contain five kegs of moonshine. The three men arrested on board are now in jail awaiting trial, while the "Daisy" will probably be confiscated. By capturing this boat the fox farmers of Southeastern Alaska have been greatly benefited, as the boat's history is notoriously one of modern pirating and poaching among the fox islands in this vicinity. - H.S.

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U. S. FOREST SERVICE
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A LOBLOLLY PINE PLANTATION IN MARYLAND

C. R. Tillotson, Washington

A short time ago the Washington Section of the Society of American Foresters listened to a very entertaining and instructive talk by Assistant State Forester J. A. Cope of Maryland. Mr. Cope's subject was loblolly pine in Maryland and dealt with this tree in its aspects of growth, reproduction, and utilization. The story he told of growth, yields from thinnings and the like, was, to say the least,an eye-opener to most of the men in Washington in that it indicated that loblolly pine is a very exceptional tree upon good soil within its natural range.

During the field trip which the Washington Section of the Society took on May 19, an opportunity was given the men to look over a loblolly pine plantation near Bowie, Maryland. This particular location is not within the optimum range of the species, but the site chosen for planting was rather good in so far as loblolly pine is concerned in that it was flat, rather low, and in consequence moist. It is, in fact, a good red gum site, which indicates its quality.

In May, 1911, the State Forester planted 1500 loblolly pine plants spaced six feet apart in rows, and an equal number of scrub pine (Pinus virginiana) in alternate rows with the loblolly. The area planted was slightly over two acres. The loblolly was two years old when set out. When examined on May 19 the loblolly trees were 30 to 40 feet tall, and varied from about four to seven inches in diameter. Assistant State Forester Cope had made careful measurements of the plantation a year or so ago, and his figures indicated that the plantation had grown at an average of two cords per acre per year. The loblolly pine was about twice,the size of the scrub pine, and the latter species was badly overtopped and the trees are certain to die within the next few years. After seeing the plantation, anyone would feel just as sanguine as Mr. Cope concerning the possibilities of loblolly pine upon suitable sites in Maryland.

AN EXAMPLE OF HOW RECREATIONAL DEVELOPMENT INCREASES THE VALUE OF NATIONAL FOREST LAND

By L. A. Barrett - D - 5

Twelve years ago when I first visited the Laguna Mountains on the Cleveland National Forest, the wonderful recreation area now known all over Southern California was accessible only by trail and its many charms were practically unknown to even the residents of San Diego County. A big cattle company which owned most of the meadow land monopolized the entire mountain while three settlers who had squatted on the land before its inclusion in the National Forest eked out a mere existence with a few stock and a little farming.

At this time the privately owned land on the mountain was assessed at $1 per acre and Uncle Sam would have been lucky could he have sold his holdings here for an average of $10 per acre.

But those were the days when automobiles were coming into use; people were getting out more into the mountains and gradually this region became known to the outside world. First a bunch of "would be" homesteaders attempted to acquire the land under the Forest Homestead Act, but realizing even then its high recreation value the writer assisted in reporting upon the area and after taking care of the three squatters the rest of the Government land on the mountain was very properly classified as non-listable because of its high value to the public for recreation purposes. Soon after this came an insistent demand for a good road to the area, and some 5 years ago the entire mountain was made accessible by a 14-mile Forest Service road which cost approximately $50,000. Following this was a topographic survey of all National Forest land; and 500 summer home sites, several public camps, sites for resorts, semi-public organizations, etc., were laid out, and a definite plan of development put into effect.

And what is the result of all this? Today there are 200,000 people who live within 100 miles of the Laguna Recreation Area. It is accessible over fine State, County and Forest Service roads. Last year 13,000 people camped here and there were in addition the families and friends of 75 summer home permittees. To the people of Imperial Valley it is a haven of refuge during the hot months on the desert. And although used solely for recreation purposes, here is what the figures show on increase in value.

Twelve years ago, Lee Morris (one of the squatters) could not have sold out for $10, an acre. Last January he sold his "ranch" for $100 an acre and he now says he made a mistake in not asking $125 an acre. This ranch is to be made into a big resort. Now Uncle Sam owns 3500 acres of this same kind of land in the recreation area and he could easily sell it for $100 or more an acre. Here is an increase in value of 1000% in 12 years due to recreational development. Can any other Forest Use except water power show such a figure?

PAUL BUNYAN'S EXPLOITS - (Continued)

Chapter II.

Origin of Sour Dough Creek

For the first time the origin of the name Sour Dough Creek as applied to the latter-day Mississippi is determined. Ranger Bunyan, being fond of sour dough biscuits, kept his batter in a wooden pail, made of a redwood silo with a bail at the top.

Once while Paul was absent for twenty-seven days at a forest fire in Saskatchewan, one of his hungry chickens, rustling for feed, upset the pail; and the dough, pouring forth in a torrent and ever rising, inundated the present Mississippi Basin from the Rockies eastward. It completely buried the immeasurable redwood forests that covered the entire basin and literally suffocated them. Hence the treeless plains. Paul, taking all small mishaps jovially, christened the main stream Sour Dough Creek.

Chapter III.

Paul's Unique Fire-Fighting Scheme.

Ranger Bunyan's chief duty in summer consisted of fire-patrol. He had made a unique device for extinguishing forest fires, the rude plan of which is among the documents recently found. Briefly, his method was to project a powerful stream of compressed air, which he carried in special kyacks, through a spiral tube straight upwards. The air, emerging, retained its spiral direction and created a whirlwind, which drew all the flames and embers far up into the sky, where they raged harmlessly.

Hence the northern lights, commonly known as the aurora borealis, which have never hitherto been adequately explained. With the progress of civilization, the atmosphere has lost this property of being projected as a spiral stream so as to form an artificial whirlwind. With the result that in later ages crude and laborious methods of fire-fighting have had to be adopted.

[To Be Continued]

COOPERATION BRINGS RESULTS

The New York State College of Forestry, Syracuse University, in an announcement concerning the tree planting exercises held recently at East Aurora, New York, states:

"It was the first time that farmers and the game clubs of any extensive community had cooperated in planting trees. These two interests have been at least tacitly antagonistic in the Empire State. The farmer and the hunter, however, have a mutual interest, one in the growing of trees for the market on his woodlot, and the other for providing cover for game. These two interests have been focused at East Aurora on a large tree planting work. The game clubs obtained 25,000 trees from the State and offered to plant them free of charge, from 500 to 1,000 trees on the land of any farmer who would set aside such sufficient ground.

The young people's organizations of the city did the planting. The work began at seven o'clock in the morning and was continued throughout the day until the 25,000 trees had been placed in the ground. 2,000 trees were also planted on the city watershed. This was done in thirty minutes. Dean Franklin Moon of the New York State College of Forestry at Syracuse gave a short talk on forestry and helped supervise the planting.

This innovation proved such a success that already applications have been filed thru the officials of the game club by the farmers who own woodlots and waste land in the vicinity of East Aurora, for 109,000 young trees to be planted next year. The success of this new scheme of cooperative planting Dean Moon believes will eventually reach other localities.

'The ease and practicability of reforesting waste land under this plan', said Dean Moon, 'ought to find general adoption throughout the country, and become a great stimulus to the reforestation movement."'

FOREST LEGISLATION ACCOMPLISHED IN 1923 IN THE STATE OF WASHINGTON.

F. B. Kellogg,-Snoqualmie.

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As a direct result of the Forestry Conference at Seattle, the nucleus of a real forest policy for the State of Washington has been established and two very important laws enacted at the recent session of the legislature.

The organization of the Forestry Conference is due to Dean Winkenwerder of the College of Forestry and the Resolutions Committee, chiefly responsible for the formulation of policies and drafting of laws, is composed of the following members.

Chas. W. Saunders, Chairman, House of Representatives, B. P. Kirkland, Professor of Forestry, U. of W., Henry Landes, Dean College of Science, U. of W., G. C. Joy, Washington Forest Fire Assn., R. L. Fromme, Supervisor of the Olympic Forest, Frank B. Kellogg, Forest Examiner, U.S.F.S., A. B. Nystrom, King County Agricultural Agent, Donald H. Clark, Secy., Rite Grade Shingle Assn.

The forest fire legislation recommended was passed with some amendments. It provides a penalty for the violation of any of the orders, rules, or regulations made for the purpose of forest protection by the State. It attempts to do away with the depredations done within recent years on young growth for Christmas tree purposes by providing a penalty for such cutting. It requires all railroads operating trains through forested districts to provide speeder patrol and requires every one operating a stationary engine to clear forest material around the setting and to take other specific precautions against the spread of fire. It also makes it a misdemeanor for any person during the closed season to throw away any lighted tobacco, cigars, cigarettes, matches, fire crackers, or other lighted material in any Forest region of the State.

The Reforestation Bill provides for a State Forest Board to consist of the Governor, the State Land Commissioner, the Dean of the College of Forestry of the University of Washington, the Director of the Department of Conservation and Development and the State Forester. This board is authorized to issue Public Utility Bonds in a sum not to exceed $200,000 for the first biennium, for the purchase of logged off lands for reforestation purposes. It is also authorized to designate any of the present State owned lands more suitable for Forestry than for other purposes as State Forests, and to make rules and regulations for reforestation and continuous forest production. This will secure proper management of the State Forest which now amount to about a million acres of commercial mature forests.

It was not possible to pass much in the matter of taxation except through the enactment of a constitutional amendment, as the Washington State Constitution is very restrictive. A bill with which the conference was in accord, providing for a constitutional amendment, and for centralization of the authority in the State for purposes of supervising and equalizing the work of the County Assessors, was introduced, passing the House, but failing to pass the Senate.

Other matters passed by the Conference or its members include two Memorials to Congress. One of these petitions Congress to provide protection for 750,000 acres of the unreserved forest lands of the Public Domain in the State of Washington and better protection for the 1,250,000 acres of Indian Reservation Forest land, which receives only inadequate protection at the present time. The other petitions Congress to continue the appropriations of 1921 and 1922, aiding the States in the construction and maintenance of roads and trails within and near the National Forests.

FOREST RECREATION IN THE BRITISH ISLES.

By Jno. D. Guthrie, D-6.

Interest in forestry in the British Isles has increased enormously since the war. The ancient Royal Forests of England, for centuries regarded as the hunting grounds of the King, contributed their share of necessary war material in the form of wood. The cutting of the ancient trees, many by American lumber-jacks (the New England Sawmill Units) served to bring home, as nothing else could, the fact that the British Isles could and should grow more timber; also, that the growing of wood crops was not inconsistent with the use of forests as parks and recreation grounds by the public.

Mr. John P. Trant, the British Consul at Portland, has made a study of and report on the use for recreation purposes of the National Forests of the United States. He has been much impressed by the fact that although the National Forests of the United States were set aside primarily for timber production and watershed protection that recreation use has been found to be entirely practicable and that such use has grown to large proportions. Due to the awakening of interest in forests and forestry in Great Britain, he feels that such a report should be most helpful to his home government as offering practical suggestions for making the forests (lands for which are now being acquired and afforested) of Great Britain not only produce wood but serve as recreation grounds for the British people.

The Portland office of Public Relations has supplied him with typical specimens of the printed material issued by the Forest Service dealing with recreation on the National Forests as well as a large amount of data on forest conservation and protection.

WASHINGTON NOTES

Boosting the Boosters:

The following are extracts from letters received in Publication from school teachers who are cooperating in the use of lantern slides and school exhibits:

Vandergrift, Pa., May 11, 1923.

"We used them (wood exhibits) in a class of natural science which has become interested in tree life. As a result we planted six hundred young trees this spring."

Ada M, Boyce,

Burlington, N. J., March 9, 1923.

"The slides have been so valuable, so interesting, and so enjoyabl that I am constrained to thank the Department of Forestry for the service they have given me, a public school teacher. They have brought into the life of the children, the fact that the United States Government is ready and willing to help them learn the geography of their own country, so we all thank you for this opportunity to see, and for the pleasure of seeing the many sets of slides that have been sent to us,

Sara S. Rainear,

Ann Arbor, Mich., May 8, 1923.

"We congratulate you on the splendid service which you are rendering the schools of the country through this material (slides and exhibits)."

Edith M. Bader

Flint Was Author of Article:- Authorship of the article in the SERVICE BULLETIN for May 28, "Relation of Improvement Crews to Cost of Held Line", was erroneously accredited to District Forester Morrell. Credit should have been given to Howard R. Flint, District Forester Inspector in charge of Fire Prevention.

FOREST PRODUCTS LABORATORY

Is This the Kind of House We Must Use? Under the title "More Help for Home Builders" a writer in the May 5 Collier's Weekly describes some small house innovations intended to save costs. He eliminates the attic and the cellar, and instead of a partition of ordinary construction recommends one constructed as follows:

Along a beam where the partition is to go are hung lengths of jute scrim like the material of burlap bags. The edges are basted together by twine with a bagging needle. At door openings and at walls, as well as at top and bottom, the scrim is attached with ordinary staples. Thus a curtain is formed. Now two plasterers, one on each side, go to work, facing each other, and put on the first rough coat, each working against the other. If only one plasterer is available, a laborer can hold a board up for him to work against. The curtain of plaster now must hang plumb, like a pendulum. The bottom hangs in the baseboard. When the first coat is dry two more are put on in the regular way. And that is all there is to the Flagg partition,- all lath and lumber and a great deal of labor are eliminated.

He says that partitions like these have been used for several years in New York apartment houses.

Laboratory engineers are inclined to question the strength of such a wall. As one said, "Wonder how long such walls would last where college students room and rough-house."

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Fires in Minnesota and Michigan were put under control outside of the Forest boundaries early in June and practically extinguished within the Forests. The loss within the interior Forest boundaries will be particularly light as practically all of the serious fires were outside. However, in consideration of the size of the fires and the very unfavorable weather conditions, the danger for the period of a week or more was very grave. Forest Inspector Kelley and District Forest Inspector McLaren were on the ground for some time and made a careful study of conditions with the hope of increasing the efficiency of general preventive methods in the future.

School Children Have Forest Float in Pageant: Early in June all the Parent-Teachers Associations of Denver held a rally day. One of the conspicuous features of the day was a pageant in which each school in the city represented some county of the State, 63 in all. One school had a float for the San Isabel Forest. The Forest Service decorated the float representing the San Isabel to illustrate the importance of care with fire. It is significant of progress that the school considered the Forest as representative of this County which is one of unusual size and wealth in Colorado.

Drought in Nebraska Broken: The drought on the Nebraska Forest was broken by a series of heavy rains the latter part of May, the precipitation on May 21, being 1.75, on the 22nd. 1.30, on the 23rd. 2.14 and on the 27th. 1.00. The total up to May 29th. was 7.98 inches for May, which is a record breaker.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Big Timber Sale: The largest sale in District 3 in many months was consummated June 1 when the District Office approved a contract with the Saginaw & Manistee Lumber Company for 15 million feet mostly western yellow pine saw timber, at $3 per thousand. This timber is located on the Tusayan and Coconino Forests and is intermixed with some 40 million feet of stumpage owned by the Saginaw & Manistee Company. Cutting will proceed at a rapid rate and the entire unit will doubtless be cut out within two years.

Detonating Ford: Ranger Warnock of the Manzano tells of one more use for a Ford in the "Ranger" the news letter of his forest and since Fords have a rather general distribution about the country if other methods fail it should still be possible to fire the blast. Says Warnock, "Ground one wire to the frame and touch the other to the magneto post of a running Ford motor. Bang! That's the way to set off shots electrically without a detonating machine."

Contrast: Everywhere about the forests nowadays one meets forest officers in uniform. The uniform sets them out in an appearance that is both neat and distinctive. It is a sharp contrast to the time a few years back when Assistant District Forester Waha attended a ranger meeting on the Alamo in uniform. Old timers tell about a certain ranger there who remarked that he wouldn't mind having a uniform so very much but he would hate to try to get around in those choke-bore breeches that "Wahoc" was wearing.

The Spell is Broken: There has been a more or less general feeling that it is difficult if not almost impossible to organize stock associations on Districts where the permittees largely consist of Spanish-speaking people. Supervisor Loveridge has put across in the last two months the organization of eleven stock associations adhering closely to allotment lines and pretty well scattered over the Carson Forest. The mere fact that these associations are organized and beginning to do business is a step forward and should go a long way to break the spell and encourage efforts for similar organizations wherever needed.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Boise to the front: Two sales totaling 30,590 M B. M., chiefly yellow pine, and located on Clear Creek drainage near Pioneerville, have just been advertised and sold to the Boise Payette Lumber Company. The stumpage rates received are: for yellow pine, $2.50; Douglas fir, $1.00; other species, $.75.

Guard Training

Mr. Raphael has just returned from the guard training school held at McCall, Idaho. While he was there he also went over the road and trail program of the Idaho Forest with Supervisor Watts. At the guard training school 32 Guards and 8 District Rangers were present. The training course was well planned and ran very smoothly. It opened up with talks by Watts, French and Raphael, followed by a reading and careful explanation of the trail plan for the Forest, particularly emphasizing its connection with the fire plan. This was followed by a day of field work, in which the Guards were divided into four groups, each under a Ranger. One group studied fire detection from lookout points and the use of the compass; the second group studied methods of estimating the size of areas burned over; the third, the construction of fire lines; and the fourth, emergency telephone line construction and trouble shooting on telephone lines. Later, Mr. Raphael talked about the proper attitude for Guards to take toward their work, and discussed trail work, including standards, location, and correlation with the fire plan. The course was somewhat hampered by very bad weather, two inches of snow falling in McCall last Saturday. The men had lots of interest in their work, and looked like a fine bunch of men.

Some Speedy Sherlock Holmes Stuff

An automobile party, speeding joyously along the Montpelier-Afton road late at night, failed to take a sharp turn, and the car went over the bank. In getting back out of the mud they pulled up a Forest Service sign in order to use the post as a lever. After getting out they failed to put the post back. Supervisor Sanford put Ranger Nelson on the trail. He found out who the culprits were. Today a draft for $10 has been received in the District Office as payment for property trespass in pulling up a Forest Service sign. The trespass occurred June 3, the payment was received here June 8.

Big Lumber Business

The Monthly Review of Business Conditions in the Twelfth Federal Reserve District states that in April the lumber business in the District, which includes Arizona, California, Idaho, Oregon, Utah, Washington, and Nevada, was the highes for any month in the past three years, and for the first time since November 1922 the mills produced more lumber than they sold or shipped. Some stocks of green lumber have been accumulated on this account, although the holdings of the mills are still considerably below normal. The production amounted to about 646 million BFt. The heaviest buying is reported from North Atlantic Coast markets, with South Dakota, Minnesota, and Wisconsin next in the order named. Who said inexhaustible timber supply in the Lake States?

DISTRICT 5 - CALIFORNIA DISTRICT

Governor Signs Forestry Legislation

That section of the State law relating to the setting of fires and the equipment to be used on engines operated on areas where there is danger of fire was not changed during the last session of the California legislature. An additional section was added requiring certain equipment on all engines used in the woods. This provides that inflammable material, including snags, shall be cleared from an area at least 100 feet in radius around the engine, and that a pump and 200 feet of 1 1/4" hose, together with seven shovels and three axes, shall be kept on each engine for fire-fighting purposes. The section omits the redwood region. This measure will be of great value in preventing fires from logging equipment, as it requires essentially the Forest Service procedure upon privately-owned lands. This measure becomes a law about June 20, as it was signed by the Governor a few days ago.

Another bill provides that private individuals may give money to the State for the purchase of virgin redwood lands, and permits the condemnation of lands where the owner does not or will not sell. This will allow the extension of the Humboldt Redwood Park by private purchase, as the State funds allotted two years ago have been practically exhausted.

The Governor has also signed the insect control bill which, patterned after the Oregon law, will make possible compulsory cooperation of timberland owners to control the bark beetle. The work will probably be concentrated in the Modoc-Shaste region for the time being.

King In All But Name

Ranger Price of the Sierra fills perhaps one of the most unique District Ranger jobs in the Service. His territory, the Pineridge District, has only 113,000 acres, but he has a volume of business that makes up for the difference. His headquarters is in the town of Big Creek, a year-round Special Use town of from 1500 to 2500 inhabitants. The town has department stores, pool halls, butcher shop, hotels, garages, art shop, lumber yard, school and power houses. In fact, it's a live town with all the frills. It has street lights, sewer and water system. The school has four teachers and about 100 pupils. It is the headquarters for the construction work of the Southern California Edison's Big Creek Project, on which about $15,000,000 is spent annually. A railroad runs through the District, the terminus being at Big Creek. There are five sawmills operating on Government timber, beside the large amount cut by the Power Company for construction purposes. Beside the Special Uses at Big Creek, Price handles the Huntington Lake recreational area, which has about 400 summer homes, four resorts, one sawmill, boat houses, Steele Normal School and three large public camps. Travel to this area is so heavy that at times Price has to put on a control between Big Creek and Huntington Lake. The Methodist Conference has a Special Use for a Chautauqua, where they entertain thousands of people every summer.

Price is the Mayor and autocrat of this domain, and is called upon to settle all the ills of his people. The ordinary citizen does not realize that there is any legal limitation to a Ranger's authority. He is even called upon to settle family disputes, and the kids are made to go to bed at night by threatening to call in the Ranger. His is an interesting and eventful life, and he is getting a good deal of joy out of it.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Red and Black Signs.

The new black and red cardboard signs (both slogan and wolf) have an appeal to auto material dealers, garages, filling stations, state stations, and even department stores, as has been learned by offering some to these agencies. The signs are new, flashy, and will attract attention to any window, hence the appeal.

Radio Talks.

District Officers have given a series of "Vacation Talks" during May and June in Portland over the Oregonian Radio Service. This service is estimated to reach 25,000 people, and have a radius of 1500 miles. During June, July, and August a series of fire prevention and outdoor talks by members of the District Office will be given.

Doing Double Duty.

Three Portland papers will soon begin series of vacation articles dealing with trips on the D-6 National Forests. The Morning Oregonian will run a series of three Sunday supplements using the material from the revised Oregon Road and Recreation Map, and descriptive matter. The Portland Telegram will start a series of "Where to Go" articles, using the revised material from "Vacation Land", and the Oregon Journal will use liberally Forest Service material for a new "Outdoor Activities Department".

DISTRICT 7 - EASTERN DISTRICT

Management Plans for the Arkansas

That the Arkansas has a practical management plan and is working it seems to have been effectively broadcasted throughout the surrounding region. In increasing numbers inquiries are being received from various parts of the State with regard to possibilities for timber purchase.

Recently a Mr. England of Rison, Arkansas, called at the Hot Springs office, seeking a tract of timber containing 15,000,000 feet and bringing the information that his home county was entirely cut out. The Pioneer Cooperage Company of St. Louis has become very much interested in the purchase of some timber in the Mena working circle. This company is planning operations just outside of the Forest boundary. In the construction of their cooperage products they use material down to 8 inches in length. The representative of the company in discussing the Arkansas possibilities assured Supervisor Plymale that their conservative methods of timber operation would be sweet music to our ears.

In the Arkansas Gazette 8,850,000 feet of timber is being advertised at a minimum rate of $6 per M and the Arkansas confidently expects that the bidding for this tract will be equally as spirited as on all of the sales made recently. Another inquiry regarding 3,000,000 feet of timber in the Hot Springs working circle is expected to result in selling at a good price.

Resort Possibilities on the Pisgah Studied

Col. J. H. Pratt and J. S. Holmes of the North Carolina Geological and Economic Survey, Forest Supervisor Rhoades, and Mr. F. A. Perley visited Mount Mitchell recently to discuss the best plans for resort development of the Mount Mitchell State Park and the Government land around it. As a result Mr. Perley's company has applied for five acres on Commissary Ridge, below Mount Mitchell Peak, to be used for resort purposes. Five miles of the toll road have been macadamized this year.

Service Bulletin

U.S. FOREST SERVICE

(Contents Confidential)

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SLASH DISPOSAL EXPERIMENT ON THE STANISLAUS FOREST

C. E. Dunston - Districts

At last we are in a fair way to reach a determination as to whether or not a less expensive method of slash disposal than the usual practice of piling and burning it can be adopted safely and extensively on California timber sale areas.

An experiment has been launched this season on the Standard Lumber Company's sale on the Stanislaus under which intensive fire protection will be substituted for brush piling and burning.

If successful this experiment should result in: (1) a saving of reproduction which is now destroyed by brush burning; (2) a saving in the cost of brush disposal on timber sale areas; (3) relieving the purchaser from the direct responsibility for the proper piling and disposal of the slash; and (4) the elimination of the difficulties of brush burning due to unfavorable climatic conditions.

The sale on which this experiment is being tried has been running since the summer of 1921 and will probably be completed in 1925. It is a donkey operation. This season there will be six sides and it is estimated that the cut will amount to 60,000,000 board feet. The type is yellow pine-sugar pine-white fir-incense cedar. The stand varies from 30 M to 40M feet per acre with a good representation of thrifty immature trees and reproduction. The cost of brush piling and burning last season was about 45¢ per M feet or from $10. to $13. per acre.

Under a modification of the sale agreement the slash disposal section has been changed so as to provide that the purchaser will merely trim tops of limbs. In addition to making the regular payments for stumpage, the purchaser agrees to deposit from time to time such amounts as the Supervisor shall require to cover the cost of special fire protection measures on the sale area. These deposits may be required up to 1935, or ten years after the close of the sale. By that time, it is confidently believed that the slash will have become so decomposed as to no longer constitute an abnormal fire hazard.

This modification of the agreement provides that the total amount deposited on this account shall not exceed the sum derived by multiplying the total scale of the timber cut from the sale area, after this plan takes effect, by 30¢ per M feet BM, and that not over two deposits not exceeding $4,000. each shall be required in any calendar year. In the event that the sums deposited exceed the cost of fire protective measures such excess shall be refunded to the purchaser at the end of the calendar year 1935.

It also provides for a return to the original method of brush disposal at any time that the Forest Supervisor shall decide such procedure to be advisable. In such event, a joint estimate shall be made by the purchaser and the Forest Service of the timber cut on the area where slash has not been piled, and the purchaser shall make a full payment equal to the difference between this estimated cut multiplied by 30¢ per M feet BM and the total of deposits made under this modification of the agreement.

The purchaser will furnish an indemnity bond not later than July 1, 1924, guaranteeing the payments for fire protection during the years 1924 to 1935 inclusive. The bond in effect in connection with the timber sale agreement will insure compliance with the provisions of this modification until such time as logging operations are completed.

SLASH DISPOSAL EXPERIMENT ON THE STANISLAUS FOREST (Concluded)

The Forest Service will handle every detail of the protection work including the hiring of all labor and the purchasing of all equipment. The protection plan provides for the clearing of a primary fire line 100 feet wide along the right-of-way of the logging railroad. The brush will be piled and burned on this fire line. A 4-foot strip will be cleaned to mineral soil along the outer edge of the 100-foot fire line. Secondary lines will consist of logging trails. At each donkey setting logging trails will be cleared of slash to a width of 25 feet in such a manner that the area will be divided into 4-acre blocks to a radius of 300 feet from the spar tree and 7-acre blocks for the remainder. The brush on these strips will be piled as logging progresses and burned in the fall.

Primary fire control for 1923 will be handled by five special men under the direct supervision of the Forest officer in charge of the sale. A lookout will be stationed on a high point commanding an excellent view of the entire area. Two patrolmen will cover definite routes on a regular schedule. Two laborers will be employed to clear fire lines, pile brush and to attend to such other protection work as may be necessary. From 1924 to 1929, inclusive, three patrolmen will be employed. From 1930 to 1935 it is believed that one patrolman will be sufficient. The plan covers in detail such matters as the construction of special telephone lines, the installation of a "Klaxon" signal system, and the purchase of tools, Evinrude pump, hose, and other special equipment.

It is also planned to conduct a study on experimental plots to determine: (1) the comparative rates of decay for piled and scattered slash under various conditions of exposure, soil moisture, size of branches, etc.; (2) the percentage of reproduction lost through burning of brush piles; (3) any other items which may arise during the progress of the experiment.

GOING AHEAD WITH ARTIFICIAL REFORESTATION

C. R. Tillotson - Washington

In the development of nursery and planting technique in the United States the Forest Service is well to the front. There is a constant effort on the part of the nurserymen in charge of Forest Service nurseries to better the methods, and this has resulted in the development of many innovations in nursery practice. The planting program is getting upon a solid foundation, and constant progress is being made toward the solution of planting difficulties. Lest we get the idea, however, and such is likely to happen to men who are more or less isolated and not aware of what is going on in other places, that we are perhaps the big tent of the circus in such operations, a word as to what is happening in other sections will not be amiss.

The largest strictly forest tree nursery in the United States to-day is maintained by New York State, near Saratoga Springs. In this nursery, and a couple of others of smaller size, the State of New York expects to produce within the course of the next year or two 15 to 20 million plants available for field planting annually. There will be no trouble in disposing of these plants. A great deal of private planting is going on in the State, and the Conservation Commission itself will plant out on State lands any surplus which is not in demand by private planters.

The State of Pennsylvania is in much the same situation. By 1925, Pennsylvania expects to produce 20 million forest trees annually for planting within the State. As in the case of New York, there will be no difficulty in disposing of this many plants each year. The growing of so many plants, their distribution, and their field planting means that in these States also nursery practice and field planting methods have been developed to a high degree.

An article in a recent number of the "Indian Forester" as to afforestation in Korea is illuminating. Upon the annexation of Korea by Japan in 1910, the Japanese Government came into possession of about 35 million acres of hill lands. Earnest efforts are being made by the Government to reforest by planting such of these lands as are in need of it. About 600,000 acres have already been planted, one-half directly by the Government, and the other

GOING AHEAD WITH ARTIFICIAL REFORESTATION (Concluded)

by private individuals to whom the land is rented. At the present time, about 150 million seedlings per year are being planted at the rate of 1200 to 2000 per acre. Such figures as these, and even the efforts of Pennsylvania and New York, make the Forest Service planting program seem rather insignificant in comparison.

KELLETER BECOMES DIRECTOR OF PURCHASES AND SALES

Paul D. Kelleter, for nearly 20 years a member of the Forest Service, is now Director of Purchases and Sales of the Department of Agriculture, having assumed his new duties on July 1.

In his new job Kelleter will be responsible for the general direction and coordination of the purchases and sales of the Department both in Washington and in the field. He will also act as the Department's representative on the Federal Purchasing Board.

Asking Kelleter for a little money to spend will be nothing new to Forest Service folks, for since 1920 he has been in the Washington office of the Branch of Operation. From 1918 to 1920 Kelleter was in Public Relations. For 10 years prior to 1918 the Black Hills Forest was Kelleter's stamping grounds, where he hailed to the title of Supervisor. Before his Black Hills sojourn California claimed his services following his graduation from the Yale Forest School in 1904.

The very best wishes of the Forest Service go with Kelleter as he begins his new job as one of the Department's executive officers. - Editor.

RECENT EUROPEAN FOREST LEGISLATION VERY STRICT

By W. N. Sparhawk, Washington.

Two European Governments have recently adopted regulatory laws which make the Capper Bill seem mild in comparison.

Mecklenburg-Schwerin's law of March 10, 1923, provides that cut-over land must be restocked within three years; land already denuded which is suitable for forest production must be replanted; no further forest destruction is permitted; owners of less than 25 hectares (62 acres) may manage their forests as they please, while the owner of a larger tract must obtain the approval of the authorities if he intends to cut over more than 4 per cent of the area in any one year. The owner of over 100 hectares (247 acres) must follow an approved working plan, under the guidance of a trained forester unless he himself can qualify as a forester.

In Czechoslovakia owners who are not operating under an approved working plan must notify the proper authorities four weeks in advance of intended cutting. Cutting is not to be allowed in stands less than 60 years old in case of high forest, or 20 years for coppice and mixed. The area cut over yearly may not exceed 1/60 of the total for tracts of high forest under 50 hectares (123 acres) in extent, or 1/80 for larger tracts; for coppice the limits are 1/20 and 1/30.

CANNIBALISTIC TROUT

By W. C. Barnes, Washington

There has always been considerable discussion among Forest officers as to the cannibalistic nature of the trout, Eastern brook trout being invariably given a very hard name for their tendency to graze upon the young of other trout.

This matter was recently taken up with the Bureau of Fisheries and the Forester was advised that:

> "Under equal conditions, the brook trout is no more cannibalistic than the rainbow and the black-spotted trouts. In some States, notably Montana, the Eastern brook trout spawns earlier in the year than do the others, and it is possible that the one and two inch brook trout that are planted do prey to some extent on the black-spotted or the rainbow which are smaller in size at the time they are planted."

PAUL BUNYAN'S EXPLOITS (Continued)

Chapter IV.

Paul's Assistant Commits Slight Blunder.

One day in the summer following the winter of the great freeze, Paul's chief fire lookout, Oliver Optic, reported a blaze covering some 43 townships on the head of Sour Dough Creek. Paul sent Oliver, telling him to come back for help if the flames threatened to get out of bounds and approach the proportions of a Class B fire. This youth, being from a great eastern university, traveled 5 miles due east toward the fire; thence turning due south, traveled 14 days and 15 nights until one morning at dawn he struck the Brazos River in Texas. It was for this reason alone that the fire spread beyond control toward Hudson Bay and the Aleutian Islands, and was stopped only by a fire-line cut in the Arctic ice-pack. Paul threatened to discharge the youth, but upon reflecting that all mortals err at times, he forgave him.

Chapter V.

The Extinction of the Mastodon.

The year of the big fire on Sour Dough Creek was the year the polar bears, fleeing before the flames from their abode on that stream, turned white from fear, and never went south again. Another creature that interested the entomologists of those times was the mastodon, which burrowed in the ground and formed great colonies, much as prairie-dogs do to-day. Indeed the Entomological Survey estimated that 236 of those rodents consumed as much forage as an average cow in those days, and for this reason attempted to exterminate them.

In vain, however. It was Paul Bunyan who devised the successful plan of scattering at the mouth of each burrow a handful of poisoned watermelons which the animals eagerly munched. Paul made a pet of the last survivor, and the little animal trotted eagerly at his heels all day long, and was playful and affectionate, but died at an early age.

This is the true account of how the mastodon became extinct - a phenomenon hitherto unaccounted for by science. Needless to say, this exploit brought fame to the Forest Service, and Paul was well liked by the cattle-barons.

[To be Continued]

WASHINGTON NOTES

Australian Province To Develop School Forests. The Province of Victoria, Australia, has just approved of a project for developing school forests in connection with the public schools. Definite areas are to be set aside, upon which forests are to be planted by the pupils under supervision of an expert forester. Planting is to be done with pine at the rate of two acres a year for each tract, and it is expected that the two acres reaching maturity each year will yield returns of £ 500 to be used for school purposes. Energetic steps are being taken to inaugurate the work.

Mattoon Author of Southern Pine Article: The article entitled "Southern Pine - In the Wake of the Boll-Weevil," which appeared in the June 18 issue of the SERVICE BULLETIN, was written by W. R. Mattoon of the Washington office.

In this same article a typographical error was made. At the end of the fourth paragraph the word "stinger" appeared for "stranger." As corrected the sentence should read: "the vigilant stranger wipes up the sluggish owner."

DISTRICT 1 - NORTHERN DISTRICT

Lumberjacks Becoming Enthusiastic Foresters: There is a county in western Montana in which the old-time lumberjacks are gradually becoming enthusiastic foresters. The county land appraiser in classifying lands talks of "timber culture" land and gives it a value which he says may seem low but is sound, since "one has to figure compound interest," he says, on the costs of holding it for raising timber. This man is of the old type of timber cruiser. He says forestry is the salvation of the county. He mentions a tract of land that he cut over 15 years ago, cut clean, from which he now can cut 2,000 ties at a stumpage value of 25 cents each. He asserts that the Government should acquire all the June 11 claims it has listed in the past and plant them to trees, since there is more money in that than in hard scrabbled stump land ranching.

The County Assessor speaks in high terms of the Land Exchange Act and is enthusiastic about the Forest Service acquiring land under that Act even though it might mean an immediate reduction in the assessable privately owned lands in the County. The financial future of the county he asserts, depends upon all its forest lands being kept productive. He is anxious to get some forest tree seedlings to plant on his ranch on a piece of land which he states is low quality pasture.

A banker at the county seat, who owns some timber land which was recently cut over, has asked the Supervisor to show him how to dispose of the slash so as to remove the fire danger and at the same time leave the land in a maximum state of productiveness.

The Supervisor expects to advise several ranchers with small areas of timber land how to mark the stand for cutting, so as to provide for best continued growth on the areas.

Here is a great opportunity for the Forest Service in a different line from that of National Forest administration. The usual departmental activity of giving technical advice is in demand. The chance is opportune also for the growing Forest Service function of extension of forestry to private lands.

While there are in the County of Sanders with the county seat at Thompson Falls better than average forest growth conditions which have in one instance resulted in the Supervisor receiving a timber sale application for cutting a 35 year old stand; while in the county the residents recognize a loss in business due to there being little commercial cutting on a large scale and the loss of large amounts of timber as the result especially of the fires of 1910; nevertheless, considerable credit is due to the forest administration, past and present, which has properly taken advantage of these examples to put over the truth about forestry and help educate the people in the economics of forestry.

Supervisor Organizes Community Meetings. Beaverhead County has no County Agent, although it has a very great stock-raising industry and substantial agricultural interests. However, the Forest Service is one of the Bureaus of the Department of Agriculture you know, and this fact, and the evidence of the public spirit of the Forest Service, are shown by the results of the efforts of Forest Supervisor Somers of the Beaverhead Forest.

With the cooperation of one or two of the prominent local citizens he arranged for several community gatherings at which members of the Bozeman Agricultural College faculty spoke and answered questions relating to the welfare of the chief activities of the people in the county. The Dean of the School of Animal Husbandry, the Federal cooperative instructor attached to the school, and the instructor in Dairying, discussed the stockmen's veterinary troubles, the essential factors for profitable dairying, feeds and feeding, breeds and breeding and besides covered a miscellaneous field as a result of questions asked.

These meetings were great successes, and the local people were enthusiastic about them and expressed a desire to have them repeated. One of the stockmen remarked that they should have also discussed markets and marketing and in view of the kind of stockmen there are in Beaverhead County, have included "Beef and Beefing."

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

The Federal Field Club represented by the heads of offices in various Government Bureaus located in Denver was organized somewhat more than a year ago. A meeting has been held regularly on the first Tuesday of each month, with the exception of two months in the summer season. The Forest Service naturally has a large representation at these meetings because it has a greater organization than any other Bureau in the city.

Through the activities of this club, the Denver City Telephone Directory now has all Government Bureaus listed under U. S. Government with the Departments and Bureaus named in proper alphabetical order. This is a great improvement over the former method and overcomes former confusion that existed, and difficulty the public had in locating anyone employed in the Government Service.

At the last meeting a committee was appointed to prepare a directory containing the names of all the heads of Bureaus and chiefs of office with their assistants and a short statement as to the duties of the various offices. The Forest Service will do the work of mimeographing and the other Departments will furnish the paper. This will be of great assistance to everybody in the Government work and the general public, for there are a great number of inquiries coming in to all Government offices as to where such and such an officer, or Bureau, is located and our information is really very meager on the matter.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Do Mesquite Blooms Indicate Season? Aged Indian named Antonio Lopez who lives near Tucson prophesies that southern Arizona may expect a season of plentiful rains this summer. He says all the mesquite trees are loaded with blooms and beans although in many of the localities there has been no rain for eight months. The heavy blooms, according to the Indian are a sure indication of good rains during the summer.

Arizona Fire Law Now Operative: The effective date of the new Arizona fire law is June 10. According to the preamble it is an act "Prohibiting any person wilfully or negligently to set fire, or cause or procure fire to be set, to any forest, brush or other inflammable vegetation growing or being on lands not his own, or to allow fire to escape from his control, or to burn brush, etc., on his own lands or lands of another, prohibiting any person to build a camp fire on lands not his own without proper precaution, or to leave on such lands a camp fire unattended, or to permit a camp fire to spread thereon, or in any manner to start a fire in forest material not his own and leave same unquenched; requiring the use of adequate spark arresters on locomotives or engines using fuel other than oil on or near forested lands; prescribing penalties or violation of the provisions hereof."

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Insect Control: For several years the bark beetle damage on the Kaibab and south Utah Forests has been increasing. It became serious enough on the Kaibab last year to make it necessary to put on a crew of men for extermination work. They are also working this spring and expect to have the job completed soon.

On the Dixie Forest the outbreak was less acute, but was nevertheless serious. Visiting these areas this spring, Assistant District Forester C. B. Morse noted an exceptionally large number of predatory beetles of two species, which appeared to be numerous enough to hold the outbreak on the Forest in check. They were less numerous on the Kaibab where extermination work is in progress.

Forest Examiner S. B. Locke will vouch for the fact that the beetles are in abundance on the Kaibab, especially a beautiful little beetle with a bright red abdomen. On a recent trip to the Kaibab he came into camp after dark and started to consume some stew which had been prepared in the morning by the dim light of a candle. Presently he detected a strange ingredient in the stew and found that it contained a liberal portion of these beetles. He said nothing to the other members of the party, who enjoyed the stew immensely. We trust that all the beetles did not crawl into the stew, and that there are many left to feed upon bark beetle larvae.

Field Day at the Dubois Experiment Station: Each spring, the United States Sheep Experiment Station at Dubois has a Field Day, to which the public, especially stockmen and others interested in the sheep industry, are invited. Forsling and Winkler attended Field Day this year, and initiated work on the cooperative project with the Experiment Station, whereby the Forest Service will be able to learn facts about typical spring and fall range outside the National Forests. Several quadrats were laid out and charted and the work will be continued later.

Kill Him, Someone With The Magnetic Pole! Extract from an application for work:

"..... and can read a Girlie compass."

"Huh! "crabs the Sawtooth batchelor, "that bird must be an expert in local attraction and 360 degrees of fickle, unfathomable variation."

DISTRICT 5 - CALIFORNIA DISTRICT

What's One Forest, More or Less, Between Friends?

"Editor, Service Bulletin:

It gars us greet to find that you have summarily deprived us of our own beloved Mono Forest and given it to D-4, according to the SERVICE BULLETIN of June 4. Please let us have it back again! PR, D-5"

PR, D-5:

Your simple request is granted. What else may we do for you? - Editor.

A Miss is Better Than a Mile: A Ranger on the Shasta received a letter from a prospective lady lookout that read as follows:

"I was told you need a lookout on Mt. --- this summer and that I could probably get the job. As I understand that you are in charge of this lookout I thought I would write you and ask what kind of climate you have there and what kind of clothes I ought to wear. Do I have to take my provisions or will someone bring them to me? Would I have to ride a horse? I have never been on a horse, but if necessary I think I could ride if you would teach me how. I hope you will tell me whatever you can about what is expected of a lookout, as I do not know anything about the mountains except around the Bay, and I suppose it is a lot different up where you are."

After working all morning on an answer the Ranger turned out this gem, some of whose high lights are herewith presented:

"Mt. --- has an elevation of 9100 feet and is rather a windy place. It would be necessary for you to go on horseback for about nine miles, but I would certainly be glad to teach you how to ride. I generally do all the packing of provisions to Mt. --- myself. The telephone on the lookout is connected with my office, and you are supposed to call me twice a day, at 9 a.m. and 4 p.m. Most of the ladies in this country wear riding breeches with leggings and either a blouse or skirt. I would like to have some idea as to your age. If you are sensitive about giving it you may state under 30 or over 30, or just say over 40. I will keep your application on file and do my best to get you a job if I find you are qualified after hearing from you further."

(Note: She must have been over 40, for she never got the job!)

DISTRICT 6 - NORTH PACIFIC DISTRICT

Liberty Bonds Serve as Indemnity Bond: Mr. Fred Herrick has finally signed the Malheur sale contract and it was approved in Portland on June 15. It was found that the cost of an indemnity bond from one of the surety companies was $26,000 per year. This high rate is due to the fact that the premium is based on the total value of the timber rather than on the liability involved. Since the amount of the bond was only $50,000 such an annual premium was exorbitant. Mr. Herrick finally produced Liberty Bonds to the amount of the bond demanded and deposited them as security.

Rubber Fire Stamps for Hotel Stationery: The Cascade is going to supply three of their summer resorts with rubber stamps. The proprietors have agreed to use them on their paper and envelopes during the summer. The stamps read: "Prevent Forest Fires - It Pays."

The Universal Car.

My motor stalled along the road
A jay screamed from a tree,
The dazzling sun from high above
Was burning holes in me.

At eventide, the sun went down,
The bee flew from the clover,
And I was still beside the road
A turnin' Henry over.

--Any Driver Thereof.

DISTRICT 7 - EASTERN DISTRICT

Ashe Presents Paper at Water Power Conference: Assistant District Forester W. W. Ashe represented the Forest Service at the Southern Water Power Conference at Asheville, North Carolina, June 26-28 and presented a paper on "Soil Erosion in Relation to Utilization of Storage Reservoirs." Mr. Ashe also examined the lands of the Stearns Lumber Company of Stearns, Kentucky, which company has requested that it be given advice as to methods of cutting its timber so as to secure a more valuable young stand. He also examined lands in eastern Kentucky which might be considered for a purchase unit under the Weeks Law for a National Forest in that State.

Another Fish Story: The fishing season in the Pisgah Game Preserve opened this year on June 1. The weather has not been very favorable for trout fishing, but still the devotees of the rod and fly will not be denied a trial of the alluring streams. Approximately $150 worth of fishing permits were sold during the first four days of the open season.

FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

Service Bulletin

U. S. FOREST SERVICE
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THE CRITICAL EQUATION IN THE FORESTRY PROBLEM

By Howard R. Flint, District 1.

The article entitled, "The Critical Point in the Fire Problem," by Mr. Shepard in the May 21 issue of the "Service Bulletin," invites further discussion of a topic which is likely to be a "heated" one during the next three months.

Probably most arguments and disagreements on subjects of this kind are due to failure on the part of those taking part in the debate to see the entire field. It seems futile to argue whether fire protection is 5% or 85% of the forestry problem. That questions is purely academic and the percentage can never be determined mathematically in any case.

It certainly can be admitted by all that if fire could have been wholly excluded from all forest lands, cut-over or uncut, for all time, there would be almost no barren areas of real forest land in the United States. Probably there would be considerable areas growing what are now termed undesirable or inferior species, but barren areas under such conditions are almost inconceivable. Certainly any observant son of the Lake States can recall areas of fine pine reproduction in slashings in that region there were not burned or that were burned over but once.

Doubtless any forester who has studied the history of disastrous forest fires has been impressed by the fact that many of them have lagged a few years behind the early lumbering and agricultural development of the region in which they occurred. Without doubt many of the fires in the East and in the Lake States started in logging or agricultural slashings and were greatly intensified by them. To a less extent this is true in the West. Most assuredly any stand of timber opened by the axe is made more favorable to the spread of fire. This is true to a considerable extent, whether or not the resulting debris is disposed of, because opening the forest inevitably increases wind movement and decreases water content. Those are two of the most important factors in the spread of forest fires.

In illustration of the danger of unqualified generalities in regard to the cause and prevention of forest fire losses it may be cited that while it is generally true that disastrous fires follow the axe, there are most notable exceptions. The Selway and Clearwater Forests in District One include a gross area of 2,710,000 acres. A large percentage of this area was heavily forested. There is not, nor has there ever been, an appreciable amount of logging or land clearing debris in or closely adjacent to this vast area because it has been virtually uninhabited and undeveloped. In the past 15 years this region has been visited by 2049 forest fires of record. Only 13 per cent of these have been due to human agencies. The human agency fires in this case have usually been least destructive because most readily accessible. A total area of 1,593,000 acres has been burned orver in these fires without the aid of any lumbering debris whatever. There are thousands of areas of double burn, having burned in 1910 and again in 1919. A little of this area has burned three times in 15 years. The double burn is as effectively devastated as any slashed area one can imagine, and there are very large areas with neither seed nor seed tree on land that 20 years ago carried a heavy stand of timber. What is strictly true of this vast area is almost as applicable on other great areas in the St. Joe, Coeur d'Alene, Flathead, Kootenai and Blackfeet Forests in D-1.

Fire protection is by no means all of so broad a problem as our national timber land policy, nor is it all of forestry. It matters little whether we call it 85 per cent of forestry or only 5 per cent. Probably it is quite safe to describe it as the one equation, the solution of which is absolutely essential before the practical solution of the others in the problem can become possible. What will it avail us to leave seed trees and seed, clean up debris, plant, or protect against insects, disease, or overgrazing, if the area over which we toil is burned over after five, ten or twenty years? Whatever percentage of the total problem we assigne to it, fire protection must become an accomplished fact before we can hope to produce much timber through the practice of forestry.

OBSERVATIONS ON A FEW CUT-OVER AREAS.

By T. D. Woodbury, District 5.

There are but few things a Forester can do that are more necessary, interesting and instructive than an examination of cut-over sale areas some years after cutting. Such examinations are to the silviculturalist what the post-mortem is to the physician - a check on the original diagnosis and a guide for future treatment. More time can profitably be devoted to this line of work.

Assistant Forester Carter and the writer recently devoted about a week to the inspection of old cuttings on the Sierra and Stanislaus Forests. The earliest cuttings seen were made in the yellow pine-sugar pine type on the Sierra Forest about 1906. The leaving of an adequate basis for an early second cut was the governing principle of the marking in those days. Apparently only 50 to 60% of the merchantable timber was removed and the areas could be cut over again at any time opportunity offered. The trees left, while large, are as a rule thrifty and although growing slowly, will remain in good condition for another forty or fifty years. The ground was apparently well stocked with advance reproduction, a large amount of which escaped logging injury. This reproduction has made a remarkable recovery, frequently growing at the rate of thirty inches in height a year. On one area which was burned clean fourteen years ago, yellow pine saplings were found eight inches in diameter at breast height and from twenty to thirty feet tall.

Only a moderate amount of subsequent reproduction has come in on these lightly cut areas. Where yellow pine is the key tree, a large amount of light is evidently needed to secure full stocking.

In connection with working out sustained yield, it will often be desirable to leave a large base of thrifty-mature timber at the time of the first cut to insure a profitable second cut. The above observations seem to indicate that this can be done without any very serious silvicultural sacrifice. The extreme value and importance of advance reproduction is also clearly indicated.

Several cut-over areas were seen in the sugar pine-fir type which occurs at elevations of from 5500 to 6500 feet. This type is characterized by the absence of yellow pine and the presence of a large quantity of white or red fir. The growing season is short and there is generally a heavy layer of humus on the ground. Advance reproduction is not prevalent in this type. A considerable range of cutting practise has been experimented with but none have been successful in securing reproduction following cutting. White thorn (ceanothus sp.) is very prevalent both in virgin stands and after cutting. This slows down the growth of reproduction. It has been the recent practise in this type to cut for increment principally which has resulted in relatively heavy cutting for the reason that these stands are largely made up of overmature trees.

In view of the negative results secured so far, rather more conservative cutting which will take the form of leaving at least one good seed tree per acre over twenty inches in diameter at breast height is indicated pending further intensive study of this type.

OBSERVATIONS ON A FEW CUT-OVER AREAS. (Continued)

It has been said many times by both Grazing and Forest Management men that sheep grazing does not seriously injure reproduction in California. In a general sense this is probably true. From our observations, however, cut-over lands in the sugar pine-fir type which are heavily grazed are suffering severely through the repeated injury to the leaders of the advance growth. This damage is caused by the drift of sheep from surrounding overgrazed patented range. This drift is difficult to control. Every effort should evidently be made to control it, however, and no sheep grazing should be permitted on cut-over areas in this type pending further study.

HIDDEN NEWS VALUES.

By Jno. D. Guthrie, District 6.

Forest officers being either admittedly scientists or having scientific points of view imputed to them, too often fail to realize news values in their daily work. This is neither illogical nor unexpected. The essence of news is the unusual, the dramatic, the picturesque, the human interest element. There has been no occasion heretofore for a Forest officer to be trained to look for these qualities.

The average newspaper man or the reporter, however, is looking for just these things. The following quotation is given as rather a vivid exposition of this fact. It is a part of the instructions from a Portland city editor to a young lady reporter in assigning her to the "beat" of the Post Office building:

"The New Postoffice building on lower Broadway. This includes the postmaster, the forest service, the army, the immigration service and all the other federal offices in the building. I am sure you will have no difficulty in becoming familiar with the beat and with the people as well as with the character of news likely to develop in each department.

"I am attaching a couple of cards showing who is who in the forest service. First of all, try to visualize what the national forests are--vast expanses of trees. Hiding among the trees, however, are thousands of stories-stories of new trails that lead into mysterious and interesting places; forest rangers who ride or walk daily along high ridges and dark canyons policing Uncle Sam's great woods for fire or vandals.

"In the trees are millions of houses (potential) which some day will rise from the carcasses of today's firs and cedars and spruces. Through the woods rush mountain torrents oversplashing with fish. On their banks are eager anglers snapping 'em out with fine dash. Back of the anglers in the shade are tents, inhabited by Mary, Bobbie, Susie, Aunt Jennie and Grandpa. They are all having a holiday, while the Ford is resting nearby.

"Some distance from the camp is a graveled road which leads up and down in and out, finally joining the main highway.

"Imagine things like these when you go into one of the offices of the forest service and see a tired-looking bird thumbing some papers and trying to look busy. Look beyond the walls into the great outdoors with all the possibilities of romance, comedy and tragedy."

PAUL BUNYAN'S EXPLOITS - (Continued)

Chapter VI.

The Explosion of Round River.

It is well known to the antiquarians that in the winter of the Big Freeze the waters of Round River froze solid, exploded, and drifted away as fine powder on the breeze. The ancient legend that Paul Bunyan the next spring hauled a tank of water from Sour Dough Creek to replenish Round River is now proved to be entirely fictitious. Round River was never re-established. Up to the time of the explosion, it had flowed for a good share of its course along the Continental Divide, for the laws of gravity were not strictly enforced in those days. Beside, as is well known, it flowed in a circle. A radical Secretary, appointed shortly after the explosion, decreed that henceforward streams should be confined to the valleys and should no longer follow a circular course. Although there is no definite proof of the pypothesis, it is supposed that the degree was made at the instance of the Bureau of Fisheries, whose field agents through long observation had ascertained that fishes, confused by the vertical sinuosities of the streams that followed the divides, were unable to find the stream-heads for spawning, and hence were on the way to race-suicide. Besides Round River and other streams flowing in circles had neither head nor mouth, and so were doubly confusing and doubly disastrous to the finng tribe.

Chapter VII.

Paul Was Some File Clerk.

Paul's files were kept in a masonry box whose large size and varied colors have forced the Geological Survey to the conclusion that its materials were quarried from what is now the Grand Canyon. The Colorado River is believed to have its source from a bottle of red ink which Paul spilled one day while writing his official diary at some as yet unexplored section of the Kaibab Forest.

A cursory examination of the remnants of Paul's archives will well repay the antiquarian. For guide cards he used rude slabs of blue limestone. The Forest Clerk having failed to fill his quarterly requisition for supplies, he invented the antiline for the manufacture of buff sandstone folders. The so-called "faults" of the neo-geologist are merely the irregularities in filing still inherent in all Forest Rangers, while the term "non-conformity" arose from Paul's failure to arrange his strata in strict conformity with the official filing system. Paul was a practical man, unversed in office methods.

(To Be Continued)

HAIL TO THE VETERANS !

Since the "Hail To The Veterans" item appeared in the Service Bulletin for May 25 the records of several more veteran Rangers have been received. These records speak for themselves. Here they are:

District 1, Ranger N. E. Wilkerson writes: "O, You Freshmen ! Speaking of old timers, the men mentioned in the Bulletin are only freshmen with the exception of Ranger Farley and he is a sophomore. On May 20, 1923, I finished 24 years of service on the Bitter Root as a Ranger and am yet going strong. I have worn out five perfectly good Supervisors and have now tackled the sixth. I believe I am the oldest man in point of years of service in the Forest Service. If there are any who have served longer let them speak up now or forever hold their peace !"

District 5 - P.R. writes: "According to the Service Bulletin there are three Rangers in the Service who have worked, respectively, 15, 16, and 20 years on the same Forest under the same Supervisor. Well, our Supervisors don't stay put long enough to give any of their Rangers a chance to equal that record, but just the same here are a couple of records that are hard to beat. Ranger Paderson Y. Lewis of the Stanislaus entered the Service in 1899 and is still going strong. Ranger Mainwaring and Forest Examiner Shinn of the Sierra entered in 1900 and 1902, respectively. Ranger Jacinto Reyes of the Santa Barbara entered in 1900 and has maintained the same headquarters during his whole period of service. Ranger Searcy of the Cleveland completed 19 years of service on May 15."

WHAT'S IN A NAME?

Pennsylvania's erstwhile Department of Forestry has blossomed forth as the Department of Forests and Waters, and Commissioner Stuart has become Secretary Stuart. "A rose by any other name ****".

AN ECHO FROM THE GOOD OLD DAYS

The Service Letter of Pennsylvania's Department of Forests and Waters says that early timber scalers wore full dress suits. The item states: "John B. Quigley began measuring trees at Chathams Run in 1846 with George A. Crawford (later Governor of Kansas) and Col. Newton C. Gross. They wore full dress suits, white ties, and silk hats."

All those in favor of adopting this unfirom in place of the one now in use say "aye" !

The "noes" have it !

FOREST PRODUCTS LABORATORY

Members National Hardwood Lumber Assn. Visit Laboratory: More than a hundred members of the National Hardwood Lumber Association came by special train from Chicago to see the Laboratory on June 16, following the annual meeting which was held at Chicago.

This association, which has approximately 1400 members, is now over 25 years old, and ranks as one of the influential lumber associations of America. Among the functions it performs for its members are inspection of lumber service, reporting of the demands and needs of the consumer, advertising and publicity service; fraternal and cooperative features also are enjoyed by the membership.

Almost 100 men are in the inspection force which covers the United States and parts of Canada and thus enables hardwood buyers to have a guarantee of quality in all their purchases from manufacturers and wholesalers. Approximately 30,000,000 feet of hardwood lumber are inspected as to grade each month by this staff of trained experts.

Lab Helps Reduce Freight Loss and Damage: Instead of the $96,700,000 payment of freight claims for loss and damage in 1921, $48,050,000 was paid during 1922.

This 50 per cent reduction was made possible through the educational bulletin service of the American Railway Association, which gives causes of losses and how they may be corrected or minimized.

The Laboratory can claim credit for a share of these savings as these bulletins include a number of Laboratory instructions on boxing and crating.

A special bulletin called the attention of railroads to the Forest Products Laboratory, and 100,000 copies of the circular on box strapping were prepared for free distribution.

A Russian Visitor: D. Kazakevitch, civil engineer of the former Russian state railways in Manchuria, China, was a recent visitor at the laboratory. "The impression I have," he wrote of his visit here, "will certainly be as one of the greatest and most interesting I saw in this country."

DISTRICT 1 - NORTHERN DISTRICT

Grain in Number of Recreationists: Figures pertaining to the use of the National Forests in District I for recreational purposes during the calendar year 1922 show that some 430,000 people used the Forests in this way, spending about 650,000 recreation days altogether in the Forests. The 1921 figures are 280,000 people and 420,000 recreation days. Of the totals for 1922, 230,000 people spending 210,000 days were automobile tourists-through travelers.

It is expected that the year 1923 will show great increases in the amount of use, especially in regard to through tourists, many of whom headed Montana-ward for the Dempsey-Gibbons fight at Shelby. At the end of the calendar year 1922 there were on or near the Forests 124 auto camps, 52 hotels for recreation purposes, over 300 summer homes, and about 200 miles of roads or trails constructed by either private or State or Federal funds for recreation purposes primarily.

During the year 1922 there were about 150 fires started by recreation visitors, which cost almost $10,000 to fight. Recreation visitors reported 27 fires. Their aid in fighting fires was negligible, scarcely compensating for the fire troubles they caused. With the increase of recreational use which can be reasonably be expected from year to year, the need of continued pressure in the prevention of forest fires caused by recreationists is readily apparent.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Another Toll Road?

Another proposal has been received for a toll road on the Pike National Forest. The old Short Line Railroad between Colorado Springs and Cripple Creek has been bought and junked. The purchaser now desires to make use of the right of way as a scenic highway. There seems to be general endorsement of his plan on the part of Colorado Springs, but some objections are heard from the people of Cripple Creek who want the road built as a public highway. The matter is not yet ready to be passed upon by the Secretary and it is still uncertain what the outcome will be.

The junking of the old Short Line is another of the railroad tragedies which have become so frequent in Colorado during recent years. This road, built at a total cost, it is understood, of over $3,000,000, served the mining camp of Cripple Creek at the height of its glory. The entire life of the railroad, however, was only 20 years.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Just Like Other Squatters: On the Apache they tell a story of an old timer who camped for two seasons on a spot near the Little Colorado. When he arrived last Spring he found a camping party already in full possession and kindly informed them that he guessed they would have to move on, since that was his camp ground. It so happened that there were numerous other spots equally attractive and an abundance of good springs near by, and the new comers readily yielded the right of possession. This little incident shows how the mere privilege of free camping carries with it a sense of possession. Undoubtedly, the old timer felt perfectly sure that he was within his rights claiming that particular piece of ground by reason of prior occupancy.

Watershed Gone, Also City Water Supply: The water situation in Silver City, New Mexico, is exceedingly critical. According to newspaper articles on the subject the townspeople at last realize that overgrazing and destruction of forest cover is the cause. Members of the Gila Forest force have been alarmed about the impending misfortune for several years and have endeavored to arouse the citizenry to a course of action. Now, however, requests for suggestions and direction are being urged upon Supervisor Winn. Conditions are so acute that water has to be shut off from the city mains every day from 2.00 P. M. until morning. There is no water for gardens, lawns or trees, and only a limited amount for other domestic purposes. The chief difficulty with any remedy the Forest Service can suggest is that only a minor part of the watershed is within the forest while the rest is privately owned. It is thought, however, that public sentiment is stirred to the point that steps will be taken regardless of ownership.

Forest Service Party: About a hundred people, members of the D.O. and Manzano offices and their families gathered in the Forest Service rooms in the Gas & Electric Building Friday night for a general good time. Motion pictures, "Building Forest Roads", "Wonderland of Canyons and Peaks" and "Grazing Industry on the National Forests" were shown and Assistant District Forester Kircher gave an address on Brazil. Sherbet and home made cake completed the program.

DISTRICT 5 - CALIFORNIA DISTRICT

Governor Signs Compulsory Fire Patrol Bill

A compulsory fire patrol bill for California was approved by Governor Richardson on June 6, 1923. This act requires forest land owners to provide a fire patrol equal to that maintained by forest owners who have cooperative agreements with the State Board of Forestry or the Forest Service or equal to that maintained by 50 per cent of the forest owners in the locality or in other localities with similar conditions. In the event of failure to provide a fire patrol the State Board of Forestry is authorized to provide one at a cost not to exceed 3¢ per acre per annum, which may be exceeded in times and localities of unusual fire hazard up to the actual cost of the work. This cost becomes a lien upon the land if unpaid after thirty days. All money collected is deposited to the credit of the "State Board of Forestry Fire Prevention Fund," from which payments to carry out the provisions of this act are made. Forest land is defined as any land with enough forest growth standing or down or with sufficient inflammable debris to constitute a menace to adjoining land. Owners residing within 1-1/2 miles of the land are exempt.

Recreation Business Booming: The recreation business is booming as never before. From January 1 to May 23, inclusive, 216 special use permits were issued, 175 of which were for summer homes. In addition to this 50 summer home applications have been approved and permits are being issued as rapidly as notice of payment of rental is received. Since the recreation season is just starting, it is evident that the Angeles will this season exceed all former records, and that the special use receipts this year will be around $40,000.

The picnic season is now in full swing, if the number of visitors to the Arroyo Seco on Sunday, May 21, was any criterion. On this date Ranger Mueller counted 900 auto parties in the Canyon which, averaging 3-1/2 persons per auto, means over 3000 people in the Canyon in one day.

Japanese Trees for California: We received a visit from Mr. Kenichiro Yamaguchi, of the Imperial Japanese Forest Service, last winter, and found him very much interested in our native trees and vegetation. We sent him seeds of a few species of our Forest trees, and the Japanese foresters returned the compliment with seeds of twelve varieties of native species. This seed has been sown in the State Nursery at Davis, and a portion sent to the University of California and the various experiment stations for trial.

State to Lease Summer Cabin Sites

Following the example set by the Forest Service, the State of California is going into the business of leasing cabin building sites to those looking for a place to spend the summer. In Fish Canyon a number of squatters have built summer homes without cost to themselves, but a representative of the State government has informed them that hereafter they must pay a rental. There are 60 acres of land occupied by the cabins, and a considerable income will be realized from the leases. A law providing for the rental of State lands under certain circumstances was passed by the Legislature at its recent session.

Radio on the Stanislaus: The City of Oakland Recreation Camp on the Stanislaus is the first camp of this character to install radio for the entertainment of its guests. Every evening concerts are received from Portland, San Francisco, Oakland, Los Angeles, Salt Lake, and elsewhere, and by the use of a quarter-ampere power amplifier can be heard over the entire camp.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Windshield Stickers Going Strong: In addition to a large number of the new D-6 shield-shaped windshield sticker sent to field officers, a supply has been furnished upon request to the Oregon Tourist Bureau of the Chamber of Commerce, and the Oregon Automobile Association.

Supervisor Rankin of the Crater has supplied 5000 to the Superintendent of the Crater Lake National Park who will distribute them to tourists along with National Park literature.

DISTRICT 6 - NORTH PACIFIC DISTRICT (continued)

Road and Recreation Map: The allotment of 2000 copies of the new Washington Road and Recreation Map to the Snoqualmie Forest were distributed by Forest Clerk Prasch within 10 days, and the names taken of several hundred more desiring this useful map were taken and later supplied.

A Beauty Spot: A fifteen-year term permit was recently issued to B.W. Huntoon, et al, of Bellingham, Wash., for a resort in Austin Pass Meadows between Mts. Baker and Shuksan, on the Washington Forest. This area is destined to be one of the show places of D-6, and will be opened to the public by the completion of the road from Glacier to the Meadows this year.

DISTRICT 7 - EASTERN DISTRICT

Another Bear Story: The bears on the Shenandoah have been making quite a name for themselves lately. An old she-bear with cubs put a man up a tree on the North River District a few days ago and held him there for two hours. Believe it or not, another one attacked a 2-year-old steer and rode him down the mountain to a point near where some fishermen were camping. The cattle made such a disturbance that the fishermen decided to investigate the affair and found old bruin enjoying a piece of shoulder. When within about ten steps he backed off growling. The men were unarmed and it was dark so the case was closed.

DISTRICT 8 - ALASKA DISTRICT

A Chance For An Argument: This is one time when District 8 makes a brag and at the same time probably starts a controversy. Here goes: Alaska claims to have the youngest Supervisor in captivity, and this means Supervisor not only in name but in fact. Incidently he is Supervisor of the largest Forest, namely - the Tongass, which has a net area of 15,443,900 acres. "Bob" Zeller was appointed Supervisor last November, just three months before his 29th birthday! Bring on your youngsters, you old-time districts "down below"! - H.S.

THE ALASKAN FLEET

By a D-6 Landlubber.

Some may prefer to put their trust
In an old "Tin Lizzie" that rolls in dust;
But let me to sea, and to windward beat
On the trim craft of the Forest Service Fleet!

First the "Hiawatha" the flagship true,
Leads the Fleet through waters blue,
The stalwart "Tahn", and the "Weepoose",
These beat any old galloping goose.
There's "Ranger One", and "Ranger Two",
Cutting along while their engines stew;
And "Ranger Four" and "Ranger Five",
All good boats for a man alive;
And soon to be added to the galaxy
The brand-new boat, "Ranger Three";
Good staunch craft in a stormy sea
Even down to the "Nellie B".
All of them natty and trim and neat--
Nine good ships of the Forest Service Fleet!

Service Bulletin

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(Contents Confidential)

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FOREST PRODUCTS LABORATORY DEVELOPS FOREST FIRE HAZARD INDICATOR

By M. E. Dunlap, Forest Products Laboratory

That a large degree of fire hazard depends upon the inflammability of forest fire fuels and that the combustibility of forest duff fluctuates with weather changes have been determined by experience as well as research.

Extensive studies of this kind have been carried on at the Priest River Experiment Station, but one phase of these studies, the relation between moisture content of forest duff and relative humidity, could not be carried on there with the equipment available. The aid of the Forest Products Laboratory, therefore, was enlisted, and for the past year the Laboratory has been cooperating with the Station in determining this relation.

In the course of the Experiment Station studies, need arose for an instrument which would show at any time the moisture condition of the duff. Evaporators, balances, and other devices were tried, but they could not tell as complete a story as would seem to be desirable. Here the similarity between the moisture-humidity relations for wood and duff was considered , and the idea occurred that this fact might be used in the development of an instrument which would show in a single reading just what conditions exist in the duff. Such a device would take into account the condition in the duff in its natural position on the floor of the forest and should reflect in one reading the influences of humidity, of the moisture content of the soil, and of the temperature.

In wood, shrinking or swelling always takes place with moisture changes. This quality of wood was used in the development of these instruments. The first instrument consisted of a cylindrically-shaped device, pointed at one end to make insertion in the duff easy, and carrying a gauge reading to 0.001 inches to indicate the change in length of several small cylinders of wood placed along the barrel of the instrument. As it was unsatisfactory to have so many sections of wood in the instrument, they were replaced by a perforated tube of compression wood. This peculiarity of wood structure is usually found on the under side of branches and leaning trees, and only in conifers is it characterized by wide annual rings with a large percentage of summerwood, which is not so dark and hard as in normal wood. The fact that this wood, unlike ordinary wood, shrinks appreciably longitudinally was used in the design of the instrument.

The third instrument developed is one which is not only more sensitive but is also of a more practical construction. In the earlier instruments the wood is in compression, but in the new design the sensitive element is in tension which allows the use of a very small piece of wood or fiber, and thus insures greater sensitiveness. Rattan, which was found in experiments to be more serviceable than compression wood, is used in the latest developed instrument. This is more satisfactory than the compression wood because of greater strength, uniformity in size, properties, and availability.

These instruments were calibrated and sent to Missoula, Montana, for tests during the month of April. If these preliminary tests indicate that the instruments are of value, a number will be made up for more thorough tests during the fire season. The complete instrument costs approximately $30.

HOPE SPRINGS ETERNAL

By Roy Headley, Washington

Along about 1911 a Forest officer was bitten by the chemical fire extinguisher bug and proceeded with certain experiments to determine whether some radical departure from conventional fire suppression methods could not be substituted for the usual systems which had been found to be sadly inadequate. Specifically it was hoped that chemicals could be used with revolutionary effects on fire control. After such experiments as he was able to devise had been completed, this officer found that the Pyrene liquid used in the Pyrene gun was just about equivalent to an equal quantity of water used in the same instrument.

A few years later another member of the same District was bitten by the same chemical fire extinguisher bug, and before District authorities were aware of it, had purchased a number of the same Pyrene guns for use on motors, at Ranger stations, and on fires. This officer was unaware of the previous experiments.

In later years the development of aircraft and the use of bombs from aircraft suggested strongly to many men both in and out of the Service that it should be possible to use chemical fire extinguishers from airplanes. This was considered by the Madison Laboratory and the conclusion reached that nothing of any practical value could be derived from this method.

A short time afterward a cooperative study of the use of chemical extinguishers in fighting forest fires was undertaken with the Chemical Warfare Division of the Army. This study led to a consideration of the comparatively new principle embodied in the "frothy" extinguishers. For a time even some of the hard-boiled fire control men thought this method held promise of practical value for us, but the question fell into the hands of an investigator of a mathematical turn of mind. This officer proceeded to calculate the quantities of water which would be necessary to lay an effective trail of fire foam in front of a forest fire. The amount of water necessary, together with the obvious difficulty of transportation in ordinary circumstances, were so great that the fire foam bubble bursted also.

The latest effort along this line is reported in a recent District fire review. After trying out a five-gallon Pyrene pump tank extinguisher a Ranger reports as follows:

> "I found that the liquid will immediately stop any blaze to which it is applied, but that where the fire has eaten into the cracks or under the roots of stubs, too great an amount of the liquid is necessary to make its use economical. A large stump which was apparently entirely extinguished began smoking three days later. There is no doubt that if there is a sufficient amount of water available to recharge the tank several times, the tanks will be valuable in extinguishing burning spots in trees and snags, where they are too high to reach with an ax or a shovel full of dirt. To sum up: the pump tank with only one filling is of no use on even a small Class A fire. If supplemented with a reserve supply of 50 to 250 gallons of water, it would be valuable in both Class A and B fires."

Thus we arrive by this latest experiment at about the same point reached in 1911, namely, that the Pyrene liquid is about equivalent to the same quantity of water used in suitable equipment.

Who will be the next to take up this alluring idea?

The amount of money which has been expended in experimental use of chemical fire extinguishers would come in pretty handy if we could collect and invest it now in water-using equipment or other fire-fighting equipment of proven value. However, the attractiveness of the chemical fire extinguisher idea and the alluring advertisements of chemical apparatus are so great that it would be a rash man who would venture to assert that the Forest Service will spend no more money trying to find an easy chemical road to the solution of our fire suppression problem. Perhaps also it would be unduly rash to assert that the duplication of experiments will never find any such method of practical value in forest fire control.

To many men, it seems highly desirable to equip every Ranger station with a chemical fire extinguisher. A good many stations have been so equipped, but although we lose several stations annually by fire, no case is known to the writer where a chemical extinguisher has saved a building. They occasionally burn up with the building. Can anyone report an instance where the presence of a chemical fire extinguisher has resulted in preserving a Ranger station building from fire?

INTRODUCING THE SELWAY FOREST

By F. J. Jefferson, Selway

Bulletin readers, through the medium of the Service Directory, doubtless all know that there is somewhere in Idaho a Forest called the Selway. Since we break into the newspapers only when the Lord in righteous wrath showers us with large quantities of fire from the heavens, they may be excused for not feeling very well acquainted with us.

As may be surmised from the introduction, we are what is known as a "Fire Forest." This classification, it is realized, may leave some doubt as to whether our function is to provide a never failing supply of fire data for the statistical sharks, a practice field for fire-fighting exercises, or to serve as a sort of dumping ground for all the concentrated fury which the Idaho skies contain during July and August, thereby protecting our neighbors after the fashion of a safety fuse.

As a matter of fact, we are a regular Forest with about 4 billion feet of real timber which Nature, unfortunately, placed in the path of the burning winds which develop in the Desert Forests of Northern California, Nevada, and Southern Oregon. These Forests have earned for themselves the title "Asbestos Forests" through their uncanny ability to pass on to us all the fires that they should have had. This is an unneighborly performance and we haven't thought well of them ever since Major Kelley told us that this was what they were doing. We must, however, face the fact that we have a big risk and a high hazard and lay our plans to meet these conditions.

Several years ago someone with a bug for mathematics or joy riding figured out the fact that we were the most inaccessible Forest in District One. The basis for this statement is the fact that you can't flit around among our trees with a flivver or a buggy as it is understood was the custom on the Forests that the mathematician was accustomed to. In fact, after you have flitted over our ten miles of road, you have to get acquainted with a saddle horse and a pack mule and enjoy their society many days if you visit much of our 1,800,000-acre woodlot.

There are six Ranger districts within the Forest, all but one of which must depend entirely upon pack trains for supplies. A round trip from the road end to these district headquarters requires from four to nine days by pack train. Such time intervals as these make it impossible to draw on outside sources for temporary help in case of fire. Each district starts the season with an organization of from 25 to 30 trail and protection men and must stay on top of its fire situations without thought of any additional assistance. We average about 120 fires per year, practically all of which are caused by lightning. When these come in groups of from 25 to 40 we have to "whip the devil around the stump" with exceeding rapidity. Firemen have been on continuous fire duty for 45 days without a day off. Some of our country has such heavy underbrush that it has required 13 hours for a husky woodsman to travel nine miles.

Fourteen pack trains, totaling 125 head of mules, make up our transportation system. These run on regular schedules and move anything from delicate scientific instruments to heavy domestic ranges. Packing for the entire Forest is done from one central station located at the end of our road. Men familiar with the idiosyncracies of a pack mule are in charge of these trains and bring them through, rain or shine.

We have a sales business, a grazing business, and a game country second to none in the West. We can therefore talk the same language as our neighbors, though possibly with an accent peculiar to ourselves.

We have no modern Ranger Stations. In some cases our District Rangers are housed with canvas. The limitation on funds for administrative improvements hits us hard. No "back to Nature" stuff in ours. We never got away.

Rangers in charge of Selway districts are as truly pioneers as the men who opened up the Idaho Territory 60 years ago. They must rely upon themselves and their own resources entirely when trouble strikes them. They must overcome the same primitive conditions that confronted their pioneering fathers. To measure up to their job they must have moral courage, a cool, clear thinking head, and a spirit of loyalty to the Forest Service that carries them, rough shod, over the difficulties and discouragements that frequently face them in their work. To sustain them in their work they must be able to feel and enjoy the primitive thrill that comes from a single-handled battle with natural forces fairly won.

PAUL BUNYAN'S EXPLOITS (Continued)

CHAPTER VIII.

A Bum Deputy Game Warden

Among Paul's archives may be found an old Deputy's Commission, signed by Hiawatha, who was then State Game Warden. Paul did not usually wink at violations of the game laws, but once he got into a jack pot. On a fine September morn in the early Pleistocene he came upon Diana wading into a lake to take a pot shot at a flock of swans. The poor lady was not only unable to produce a hunting license, but it was the closed season on swans besides, the opening date being the early Carboniferous. For once Paul failed in his duty. Muttering something about the inefficiency of the local game wardens, he ran away up the mountain side. The brush he knocked down en route has since been incorrectly termed a windfall. Paul was no ladies' man.

CHAPTER IX.

Paul Gets a "Personal Letter"

Paul Bunyan was a mighty hunter. Of course there were no automatics in those days, but when Paul rammed a meteorite down the muzzle of his 36-inch culvert-iron rifle, it meant a dead dinosaur every shot. Paul invented the ivory bead when he attached a polished mastodon tusk to his front sight.

Once upon a time Paul nearly got fired. A saber-toothed tiger had been raiding his hen roost, so he up and shot him and unwittingly presented the hide to the County Clerk and collected the regular bounty. The Supervisor heard of it and wrote him apersonnel letter, reminding him that Regulation G-29 entirely prohibits a Forest officer from collecting bounties. As a further punishment the Secretary cut off his July 1 raise. All succeeding secretaries have inflicted the same penalty on all Paul's successors until it has now become a geological habit.

(To be Continued)

WASHINGTON NOTES

Mr. Sherman Writes on Light Burning: The July 4 issue of THE OUTLOOK contains an article by Mr. Sherman which gives very interesting and timely facts on light burning. The article is entitled "Playing With Fire" and is primarily designed as an answer to an article by Capt. E. C. Crossman printed in the June 27 issue of THE OUTLOOK which argued in favor of light burning.

Mr. Sherman's concluding paragraphs read: "Fire everywhere in the forests of the United States is the great menace against our future timber supply. Fires annually burn 10,000,000 acres of our forest land. Fires not only destroy immense quantities of timber ready for the saw, but -- even worse -- they destroy the young trees from which the future forests, if there are to be any, must come.

"Captain Crossman, like most other people, falls into the error of confusing these young trees with worthless underbrush. Twenty years of protection have encouraged billions of young trees to spring up in the National Forests. Shall we burn them now to prevent the danger of their burning in the future, as one might burn down his house to prevent its catching fire?

"This is the gist of all the arguments in favor of forest fires: Burn down the forest to prevent the forest from burning down."

Office of Forest Experiment Stations Created: The Office of Forest Investigations in the Branch of Research has been changed to the Office of Forest Experiment Stations. This is partly because the old name is somewhat ambiguous, since "forest investigations" covers all branches of forest research, whether in silviculture, products, or economics, whereas the Office in reality deals with silvicultural research only.

Moreover, the new name is especially appropriate because of the recent advances in forest experiment station work. With four stations in the East and with the probable building up of the existing western stations, silvicultural research has pretty definitely crystallized round the experiment stations.

FOREST PRODUCTS LABORATORY

Book on Chairs and Forestry: That the use of small-sized material in the manufacture of chair stock will permit far greater utilization of limited hardwood supplies is one of the conclusions brought out in the book, "Chair Dimension Stock," prepared by the Forest Products Laboratory of the Forest Service and published by the Association of Wood Using Industries, 531 Monadnock Building, Chicago (Price $2.00).

Of the 320,000,000 board feet of lumber annually used by the regular chair industry only 16 per cent is ready cut small dimension stock, whereas the actual needs for 250,000,000 feet, or almost 80 per cent, could be met by wood stock in small sizes.

The results of these extensive studies are of use in determining the most economical method of converting the log into the product required, not alone by this industry but by others whose small wood stock requirements are similar in size, quality, and species to those of the chair industry.

Paul Bunyan Writes to the Lab: That Paul Bunyan is not a myth is attested by the following letter which came to the Lab:

"Members of the Forest Products Lab: On account of the extremely hot weather, I request that on Saturday forenoon, June 23, you shall not attempt to do any work, but simply remain around the building and try to keep cool. I am ordering 170 gallons of ice cold punch for each section, and it should be delivered early in the forenoon. You can also draw on my account at the Badger for all the ice cream sodas and other hot weather necessities you may desire. Go as far as you like! I should like to be present in person and help you enjoy the forenoon, but I must stick to my job here of getting out cordwood so the people in Superior won't freeze to death this summer."

(Signed) Paul Bunyan, In Charge,
All Forest Activities.

North Woods, June 22, 1923.

DISTRICT 1 - NORTHERN DISTRICT

Now It May Be Told: We wonder whether that article of Schreck's, "Auto Trucks in Fire Fighting," in Bulletin of June 18, was censored by Fire Chief McLaren before publication! Some time ago there appeared in the Bulletin some costs of "held line" in different districts accompanied by some observations of the author as to costs in Districts 1 and 2. Our industrious fire chief immediately went into an analysis of figures. He also went into an explosion of words, but didn't seem to be able to put his finger exactly on the right explanation. Now, since allotments are settled and all is peaceful for another season, this man Schreck has let the cat out of the bag.

We want to call attention to the cat because it seemingly is a big one, and, it is suspected, may burrow itself in the Michigan or Minnesota sands and hibernate over the winter period of cost figures and comparisons. The trouble with District 1 seems to be that Supervisors have never been ingenious enough to think of hitching up a plow behind a truck and make fire lines at the rate of five miles per hour in the white pine type. Although the cost of gasoline is probably higher, the expedient would doubtless result in a material reduction in cost of "held line," provided, of course, that the driver held to the truck and held it along the desired route of the fire line and the truck held to the plow, and the plow held to the desired depth in Mother Earth. It is obvious that such a combination would stop any fire that ever got started and that costs would be stopped far below where they have stopped in the past.--F.M.

Heavy Rainfall Has Prevented Fires: The unusual rainfall in District 1 this season has so far made it unnecessary to place lookout men and smoke chasers at their stations, but the rain has also made necessary an unusual amount of work in the maintenance of trails, telephone lines, and roads. The ground has been soaked up to such an extent that only a moderate wind is required to blow down dead and decadent trees, and the protection forces have been more than busy trying to keep lines of communication open. Time after time trails and telephone lines have been cut out only to have more trees across them in a few days than were there at the first spring clearing. This has been exasperating to the protection forces, but they console themselves with the observation that it is better than fighting fires.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

The Massachusetts Forestry Association is putting on a tour covering the National Forests and National Parks again this year. A party of 20 went through Denver to Estes Park through the Colorado National Forest. They were addressed by Mr. Wheeler at Fort Collins on the night of June 27, and plans have been perfected for them to meet other Forest officers while in the District.

D-2 Hard Hit by Spring Fires: It was with a great deal of regret that D-2 broke into the big league this spring with a real fire situation on the Superior Forest. It cost about $20,000 to handle the fires on the Forest during May and June, which resulted largely from slash burning on privately owned lands and a late, dry, windy spring. Most of the fires started outside the Forest boundary.

Mr. C. M. Granger has been detailed to Washington for six months commencing July 1 to help on reclassification. While it is hard to lose our Chief of Operation for such a long period, at the same time it is a pleasure to be able to help on the vitally important job of reclassification.

DISTRICT 3 - SOUTHWESTERN DISTRICT

New Fire Law at Work: The Arizona Fire Law of 1923 became effective June 10. Reports are coming in that show convictions under its provisions on various forests. It is apparently a good law and simple in its operation. Ranger Bruhl of the Tonto secured the first conviction for his forest. A party of New York to Los Angeles tourists on the morning of June 19 made a large camp fire at the public camp ground near Pine and left it burning. Other campers watched it but let it burn to see what the Forest Service would do about it. They saw when Bruhl happened along. He got a description of the party and the direction of travel and telephoned Ranger Stewart of the Coconino to watch for and to apprehend the offenders. Confident of success Bruhl then got the Judge and took him to the scene of the fire. The other campers gave informal evidence. Stewart intercepted the party and took its members to the Bly Ranger Station where a telephone trial was held and a fine of $10 assessed and collected.

Forests Can Be Used Without Man-Caused Fires: The Famous Players-Laskey Corporation recently filmed Zane Grey's book, "To the Last Man." The picture was made on the Tonto Forest in the vicinity of Payson in the same region in which the plot was laid and where Grey actually wrote the story. Many people were used in the work and there was much running about with trucks and horses. The season was dry and hazardous yet not a single fire accident occurred. The Tonto gives credit for this to Ranger James and to the guide, Mr. A. L. Haught. The picture people were told that if they did not use every precaution they would find themselves fighting forest fires instead of making motion pictures. They preferred to make pictures.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Goose Creek Timber Sold: On June 18 bids were opened for approximately 10 million feet of timber in the Goose Creek Chance on the Idaho Forest. Hoff & Brown Tie & Lumber Company of McCall, Idaho, was the successful bidder. This firm has been cutting rapidly on the area for the last month under advance cutting procedure. The stand consists chiefly of Western yellow pine, with Douglas fir, larch, spruce, lodgepole pine and white fir (lowland fir) in mixture. The stand is rather overmature and the Forest Service has wished to have this area cut over for many years.

Short Cuts: The following letter was received from a permittee:

"Mr. Johnson: I am writing for a crossing permit to cross the Forest. I haven't time to wait for a reply to this letter, so I hope that it will be all right if I cross."

DISTRICT 6 - NORTH PACIFIC DISTRICT

Front Page Stuff: The Cascade got on the front page of the Portland Oregonian recently with Ranger McFarland's auto registering device at Oakridge. It also has been receiving considerable publicity over the biggest Douglas fir sale ever advertised. Then the Forester, Assistant Forester Carter, and Assistant District Forester Ames came along and it got in the press again.

Douglas Fir as a Pulpwood: Douglas fir because of its pitch content is not considered suitable for the manufacture of either a high grade of ground wood or sulphite pulp. Characterized by a long but coarse fiber, it is suitable for the manufacture of ordinary wrapping paper, high test container board, or any unbleached paper - this by the sulphate or soda process. One mill in the State of Washington is using it in the manufacture of book, writing, and wrapping paper.

Of the 334,000 cords of pulpwood (spruce, hemlock, white fir, cottonwood, and Douglas fir) consumed in Oregon, Washington, and California, largely in the two former, in 1920, only 8,000 cords were Douglas fir. In this year 16,000 cords of cottonwood were consumed.--W.H.G.

Invading the East: A Portland representative of the Beta Theta Pi College fraternity called at the District office on June 20 and asked for a supply of D-6 recreation folders and publicity material. He stated he wanted these to distribute among the 2,000 delegates of the fraternity at their National Convention at White Sulphur Springs, W. Va., in the latter part of June. He was supplied with samples of all of D-6 material, as well as publications on general forestry. A year ago another Beta from Portland likewise went East loaded with the "gospel" of Western outdoors.

Wright Right on the Job: Supervisor Wright of the Columbia Forest was the principal speaker at the recent get-together meeting of Hood River, Ore., and White Salmon, Wash., boosters and business men. The meeting was held on the Washington side of the Columbia River at "the Eyrie." Wright told of the road and trail development work being carried on by the Forest Service in the Mt. Adams region and what this will mean as added attractions to tourists, campers and others.

NECESSITIES

F. M. in "Life" of April 5

We have to have chairs,
Don't we,
And houses and footstools?

When you think of it that way
It makes the thing right ...
Lumbering, I mean,
Cutting down trees in their prime;

I guess, in the night,
They whisper their fear
To the stars;
The man-moth,
With the Saw-tooth blight
Is here;
I'm next!
I'm only sixty years .....
Just in the height
Of my usefulness ....
Look at my girth!
The Moth says I'm worth
Nothing as I am ....
But a great deal to Grand Rapids!

When we are struck down, pronounced dead,
Is it because some angel needs a new bed?

DISTRICT 7 - EASTERN DISTRICT

Fire Law Enforcement on the Cherokee: Fire law enforcement on the Cherokee means a job replete with thrills. In this particular section of the southern Appalachians dwells a sweet little crowd of illiterate mountaineers who habitually, perseveringly, and, sand to say, more or less effectively "burn the woods." Local prosecuting attorneys, sheriffs, and other representatives of law and order seem to have no great eagerness for mixing in with these people on anything so seemingly trivial as violations of forest fire laws and regulations. Local Forest officers are at times inclined to lose faith in all the acceptable means thus far devised for bringing about adequate protection. For instance, on May 3, Homer Gooch set out a little fire. On May 11 Ranger Woody and Guard Anderson brought him in and he was bound over to the Federal Court under $500 bond. A few days after the hearing Homer and his brother called at the home of Sam Waters, witness for the prosecution and told Mrs. Waters that their father, Joe Gooch, had said that if Sam Waters went to Federal Court and testified as he did before the Commissioner, Mrs. Waters would see her husband no more. Homer told Mrs. Waters with an oath that Sam Waters would get enough fire before he was through.

On the night of June 4 the Waters home and nearly all of their belongings were destroyed by fire of incendiary origin. The family narrowly escaped burning to death. Joe Gooch also threatened Ranger Woody and stated that the prosecution's witnesses would never get to Federal Court. The Forest Service at this point asked the arrest of the parties threatening and intimidating witnesses, and, further, that the defendant, Homer Gooch, be imprisoned until his trial. This is the status of the case at this writing. Verily it is loaded with possibilities of succeeding thrills - and it is by no means an exceptional case for this particular section.

RUDE RURAL RHYMES
(Written by Bob Adams)

Arbor Day

Soon as he landed from the seas and limbered up his pious knees, the Pilgrim fell to chopping trees; and when he died he left his son an ax, a Bible and a gun. The forest furnished beam and rafter to him and all his children after. They swung the ax with mighty strokes and hacked down hickories, pines and oaks. They needed wood for house and barn, for spinning wheels to twist their yarn. They needed wood and trees were plenty, where ten would do they cut down twenty. Yet these old boys we should not scorn; they wanted land to plant their corn. They had to break the forest screens to raise a crop of Boston beans. Though in the boughs the birds sang sweet, the wooded land could grow no wheat. Also their sons have formed the habit, and when they see a tree they grab it, then haul it off to saw and slab it. So in our day the trees are few on many hills where once they grew. The dryads all have left their places - at least we seldom see their faces. O, if you have some steep hillside where useless ferns are spreading wide and pasture grass has mostly died, I pray you give it back to wood and set in trees o'er many a rood. You may not live to chop the same, but future folks will bless your name. The fledgeling birds in many a nest by your wise kindness will be blest. We also ought in clays and loams to set out maples 'round our homes. A tree, it is a pleasant thing in winter, summer, fall or spring, and we should learn and often quote the verse on trees that Kilmer wrote before he left his poet wife and gave in war his good young life. In heaven I hope he sings and sees, more tuneful songs and lovelier trees.

Service Bulletin

U. S. FOREST SERVICE

(Contents Confidential)

Vol. VII, No. 30. Washington, D. C. July 23, 1923.

PRAISE FOR THE EVINRUDE PUMPS

By T. D. Woodbury, D-5

The local representative of the Evinrude Motor Company informs us that they are seriously investigating the possibility of developing a complete series of pumps. The first pump of the series would be much larger than their present two-cycle engine which we have already tried out and reported upon. The next of the series would be the present pump, and the third a one-cylinder pump which the company already has on hand.

The idea they have in mind is to work out a relay, securing water with the larger pump and redistributing it to the fire with the smaller pumps. They have asked for our suggestions which we have promised to give to them later in the season.

We have tried out the Evinrude pump on actual fires on the Plumas and in the two instances in which it was used it paid for itself by saving an enormous bill in suppression and patrol. One of these fires started in the center of a bad sawdust pile, surrounded by refuse, debris, and waste lumber from an abandoned sawmill site. Adjacent to this sawdust pile was a slash area of many standing snags.

With four hours pumping we were able to completely put out this fire which covered about three-fourths of an acre. The sawdust in places had already burned down eight to ten inches. In handling the sawdust we practically sluiced out the burned portions. Another fire which occurred on a sawdust pile was likewise handled.

The surprising development in California in connection with the pump is the interest taken by a good many operators. We are informed that ten of the Evinrude pumps have been sold to the redwood operators. Two outfits on the Plumas who have seen the pump in operation are also contemplating installing this equipment on their operations.

As Ranger Kloppenburg of the Plumas expressed it: "This was the first pleasurable fire-fighting I have ever had," after we had completely extinguished the sawdust fire.

NEW YORK STATE SOLD ON GASOLINE FOREST FIRE PUMPS

By C. R. Tillotson, Washington

The Conservation Commission of New York State has recently added nine gasoline forest fire pumps to its equipment for forest fire fighting in the Adirondacks. Ten of these pumps were already in use so that the State now has nineteen in that region. Each of these pumps is said to be equal to a crew of 50 to 75 men using the old-time fire fighting tools. They are equipped with 1,200 feet of hose, giving them an effective fire fighting radius of about a quarter of a mile, which can be doubled by connecting two pumps.

During the spring just past one of these pumps was in continuous operation from 3:30 p. m. in the afternoon to 7:30 a. m. the following morning. The Conservation Commission requires the rangers to make semi-monthly tests of the pumps throughout the fire season. Records are kept of the time consumed in getting the pump to a given locality and in operation, time being counted from the start to the delivery of water at the nozzle. There is keen rivalry among the rangers in charge of the pumps to make a good showing and the effect of the test is steadily to raise the standard of efficiency.

SHEEP ON GRASS RANGE

By W. R. Chapline, Washington

In a recent test given to a number of students in a western university, a question was asked concerning the points which should be avoided in selecting sheep range. A great many of the answers to this question gave the reply that a grass range is to be avoided; and a number of the men, though they had had considerable experience on the range, gave this as about the only important feature to be avoided.

During the last ten years or so there has been a material decrease in the number of sheep in the Western States, and at the same time a material increase in the number of cattle. In many places the substitution of cattle for sheep has resulted in turning over to cattle range that is better suited to sheep. Therefore a discussion as to use of grass range by sheep seems timely.

Many grass ranges - especially where grama, bluegrass and even some of the brome grasses apredominate - are probably just as well suited to sheep as to cattle, all factors considered, while some are better suited to sheep. Even on those bunchgrass ranges where the forage is not so well suited to sheep as to cattle, topography, lack of adequate watering facilities, animal pests, or other factors may in many cases be the determining elements and make a change from sheep to cattle inadvisable. For all practical purposes the utilization of such grass ranges is fully as satisfactory with sheep as with cattle. A certain amount of palatable grass is highly desirable on lambing range and also is important in the development of milk production throughout the entire summer. Fall use of grass range with sheep is important for hardening the fat of lambs, and for this purpose the seeds of many grasses practically provide a grain ration on many western ranges.

No attempt has been made in this brief statement to outline all the desirable features of a sheep range, but it does seem advisable to have more thought spent on suggested changes from sheep to cattle, especially when we consider that sheep generally have been profitable, while for a number of years, and particularly in some parts of the West, many cattle owners have had difficulty making a satisfactory profit from their livestock.

PISGAH FOREST IS HOME OF UNIQUE INDUSTRY

By J. E. Scott, District 7

"Me and my family have gathered 946,000 Galax leaves this year," said a mountaineer in Lenoir, North Carolina, recently.

Between November and March each year the Pisgah National Forest is astir with a unique industry. The men, women, and children of the mountains are abroad early and late in search of the perennial Galax, the broad evergreen or bronze leaves of which are gathered in unreadable numbers and shipped to every part of the world for decorative uses. The Pisgah Forest is, doubtless, the principal source of the world's supply, as Galax is very largely confined in its range to the mountains of western North Carolina.

The pickers market their harvest for cash or in barter to dealers in Lenoir, Johnson City, Asheville, and other surrounding towns at from 30¢ to 50¢ per thousand leaves. The experienced mountain woman will readily pick 10,000 leaves in a 10-hour day, so that the addition to the family income from this source is a noteworthy one, even when due allowance is made for sorting over the day's collection and discarding the specimens unfit for market.

The Galax pickers are in the woods during parts of both the spring and fall fire seasons, and because of their resulting availability for service in suppression crews and their active direct interest in preventing fires, no attempt has been made to impose fees for the removal of this forest product. The pickers constitute a valued supplementary protection force.

Regulation of the picking season may yet become necessary. The season of greatest demand for Galax is just before Christmas when the bronze tinge is in the leaves and when the dealers are in eager competition for the available supply.

PISGAH FOREST IS HOME OF UNIQUE INDUSTRY (Concluded)

One hustling firm in a nearby town now contemplates the installation of cold storage facilities and a yearlong buying season which might temporarily give them the jump on their competitors in the fall selling market, but which would certainly encourage yearlong and probably excessive picking and eventual destruction of the goose that lays this golden egg. If, to maintain the industry on a permanent sustained yield basis, proscription of opening and closing dates for the picking season within the National Forest becomes necessary - leave it to Supervisor Rhoades.

PAUL BUNYAN'S EXPLOITS (Continued)

Chapter X.

Petrified Forests and Alaskan Coal

Paul Bunyan never smoked cigarettes, but he was very fond of his pipe. One day he sat on the top of the San Francisco Peaks looking for fires, smoking his pipe the while. The wind blew out several of his matches, which he carefully broke in many pieces and tossed down onto the plains where there was nothing to burn. These old matches of Paul's are now being exhibited to unsuspecting tourists as the Petrified Forest.

Later on that day Paul spied a smoke in the northwest. He immediately set out to extinguish the blaze. Stepping down off the Peaks, he tapped his pipe on Mt. McKinley, carefully covering the charred tobacco with earth. A chap named Guggenheim recently discovered these remains and claimed them as coal fields.

Chapter XI.

Paul a Good Civil Engineer

Modern civil engineers have unblushingly appropriated the credit for discovering that great principle of topographic mapping - the contour. Without malice and only from a sense of justice and fair play it must be emphatically stated that Paul Bunyan was the real discoverer. It came about in this way. Paul was a keen hunter; but as game protection in his day had never passed the crude State license system, the larger game animals, such as the dinosaur, the megatherium, the pterodactyl and other waterfowl, had become well-nigh extinct. So Paul had to content himself largely with the sidehill gouger, that curious little animal whose legs were shorter on the off side than on the near.

This personal idiosyncrasy made it necessary for the gouger to travel parallel to the hillsides on a perfectly horizontal line, - whence the epithet "sidehill." One day while chasing a gouger Paul suddenly noticed with amazement how this horizontal line, so accurately pursued by the little animal, followed the contour of the hills, bending with each dip and rise and fold. Henceforth he used these imaginary lines in making his crude topographic maps; but as, in mapping, he used the arduous method of actually following each contour on the ground, the work was slow and tedious, and carried him to many strange corners of the globe.

Once in making a topographic map he followed a contour clear to Tierra del Fuego and did not return for 18 months. It must be admitted that the method had its merits, since it brought Paul into touch with many curious tribes and customs; but it has been displaced in later ages by a more efficient, if less romantic, system.

(To be Continued)

COLORADO FORESTRY ASSOCIATION

Mention has been made in the District 2 Service Bulletin of the age and importance of the Massachusetts Forestry Association. This mention brings to mind a number of facts regarding the Colorado Forestry Association which place it in a unique position with regard to age and early activities.

In the early eighties the need for such an organization was keenly felt by a small group of public spirited citizens in and near Colorado Springs, led by Col. Edgar T. Ensign. Weekly articles were published in the Gazette under a special heading, "Forestry in Colorado," for the purpose of stirring up a wider interest in the subject. In November, 1884, a forestry convention was called in the

COLORADO FORESTRY ASSOCIATION (Concluded)

State House in Denver. The efforts and purpose of this convention and the association formed at that time were to secure adequate and proper legislation and to mould a body of public opinion among the more indifferent citizens of the State. Although the usual factors which stand in the way of such pioneer enterprises militated very strongly against the realization of the work of this small group, yet many things have been accomplished which have affected forestry in the State very strongly ever since.

The subject of forestry was taken up in the State Constitution and under the provision made, opportunity was given for greater development than was possible owing to the usual lethargy with which such matters are considered in a new country. The Bill introduced by the infant association called for three State Commissioners, later reduced to one, and carried a $6,000 appropriation. This appropriation was eliminated leaving the matter hardly more than perfunctorily taken care of. The association, however, continued with its work, holding annual meetings lasting two days. Delegates came from all over the State and read papers on various related subjects; committees were appointed which had in charge special study courses, the preparation of magazine articles and the publication of addresses and scientific papers. The matter was also agitated of a Government forestry farm which, in a very small way, anticipated the present National Forests.

Although these efforts bore no immediate results, at the present time when forest conservation is a more popularly recognized matter of importance, the early activities and records of this association give it a background which enables it to be a public factor of unusual value.

WASHINGTON NOTES

Forestry Positions Open in Texas: State Forester E.O.Siecke, College Station, Texas, has notified the Forest Service that positions for two technical men in his department are open, namely, those of Assistant State Forester and Farm Forestry Extension Specialist. Information with reference to these positions may be obtained from Mr. Siecke. Forestry in Texas has shown marked development in the past two years, and it is believed that these positions offer promising opportunities.

Off for South America: Dr. James R. Weir of Forest Pathology, Bureau of Plant Industry, formerly of District 1, has gone to Brazil with a party of Government experts from the Departments of Agriculture and Commerce to study the rubber industry. Dr. Weir is to report on the pathology of the rubber tree. The expedition is to last six months the first trip and is to be followed by a second expedition a few months later. The route is through the Amazon Valley into the heart of the tropical forests.

Laboratory's Report on Aircraft Materials Receives High Praise: The following is taken from a letter from Prof. A. P. Warner of the Massachusetts Institute of Technology, an authority on airplane design, to Mr. G. W. Lewis of the National Advisory Committee for Aeronautics:

"I enclose herewith the Forest Products Laboratory report which you sent to me for comment. I can not praise it too highly. It seems to me one of the most important works that has ever been done on aircraft materials and the sooner you get it into print the better. The only comments which I really have to make deal with minor points of arrangement, and I have indicated some of them in red-penciled notes on the margins.

"In the first place, I think the two parts should be published as separate reports. They deal with quite distinct subjects, the first of which is of comparatively little direct interest to most airplane designers. It is very seldom that the designer of aircraft has to calculate deflections accurately enough or to deal with beams short enough so that sheer deflection becomes a serious factor in this work. That section of the investigation is of interest primarily to those who specialize in timber and its properties or testing.

"The second part of the work deals with form factors which are of vital importance to every aeronautical engineer. The value of that work can not be emphasized too highly. It is monumental in its character and revolutionary in its effect, and, strange as it may seem, this appears to be the first publication of any real value on form factors in wood. Indeed, in most parts of the world where airplanes are being designed the very existence of such factors appears to be unsuspected. I have searched the works of Pippard and Pritchard and of Bolieve without finding the slightest allusion to this subject, and I believe that the "Flugzeugstatik" of van Gries also pays no attention to the relation between the form of a beam and its strength. The British have long recognized the importance of the work of the Forest Products Laboratory, but that remarkable institution has never done anything more important than this."

FOREST PRODUCTS LABORATORY

Laboratory Man Receives Patent for Glue: Patent for a blood glue which may be applied without a hot press and which has greater water resistance than any casein or blood glue hitherto tested at the Forest Products Laboratory has recently been received by Mr. A. C. Lindauer. The new glue, which is granted for the free use of the public, will find considerable value in the commercial production of water-resistant plywood.

Perhaps One of Our Tree Lookouts Could Answer This: "I want to know how to get up into the top of a seventy-five foot loblolly pine tree - how to get a half dozen ladies and gentlemen up and by some perfectly safe and simple means for the purpose of taking tea on a little platform to be constructed in the branches and for the purpose of observation. Of course some device must be suggested that is as stated free from danger and one that does not require skill in its use. Elevators of various kinds have been suggested, but I am now turning to some form of ladder or spiral stairway of very light construction. While the tree might support such a structure, the tree itself must not be injured."

(From a Georgia lawyer.)

DISTRICT 1 - NORTHERN DISTRICT

Fire Loss on the Coeur d'Alene: Supervisor McHarg estimates the cut from the Coeur d'Alene for 1924 at 50,500 M at an average price per M of $8.46 and a total income of $426,665. This is not just a pipe dream of McHarg's, but is based on sales now under contract and the amount of cut required by the contracts. Unless business conditions occasion a serious depression in lumber production, the cut should be realized.

In an article written by McHarg and published in the 1923 "Idaho Forester," the statement is made that fires in the Coeur d'Alene in 1889 and 1910 reduced the allowable cut during the present rotation by from 30 to 40 million feet annually. At present prices and taking 35 million as the reduction figure, the loss in income from this forest because of fires will amount to about $300,000 annually. In terms of manufactured product, using a conservative mill run price, the loss is in the neighborhood of $1,000,000 annually to the community.

The sales on the forest have equaled the allowable cut for several years. The only reason that more timber has not been removed and can not be removed in the future is that it is not there to sell. A lot of timber has been burned in this district and elsewhere, the worth of which was problematical because of inaccessibility or low intrinsic value. But this is not true of the Coeur d'Alene losses. There is no doubt that intensive protection and management on this Forest will pay, and along this line it may be interesting to state that McHarg is now making it a condition of timber sale contracts that employees be forbidden to smoke in the woods.--Fred Morrell.

Where Will White Pine Stumpage Stop? As an indication of possible future stumpage values for white pine favorably located, a recent Coeur d'Alene appraisal submitted in connection with a trespass case offers food for thought. The timber amounted to 132 M feet, located within skidding distance of a drivable stream. An overrun of 17 per cent is used in the appraisal, and lumber selling values for white pine for the last quarter of 1922, which averaged $46.97. Here is the appraisal, based on these premises:

Appraisal:-	Per M B M
Logging costs -------------------	$14.43
Manufacturing costs, log scale --	16.67
Total costs and margin -------	$31.10
Selling value, log scale --------	57.27
Stumpage indicated --------------	$26.17

There seems no reason why white pine lumber values in the future should not settle down at around this figure, and it certainly looks as though white pine second growth 30 or 40 years old which could be picked up at a reasonable figure might be a pretty good investment, even with the present high tax and fire protection costs.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

More Favorable Sentiment Among Stockmen: A memorandum just received from the Gunnison recites that a resolution was introduced and passed at the meeting of the Advisory Board of the Gunnison County Livestock Association June 16, at Gunnison, favoring the addition of all the territory lying between the Continental Divide on the east, Soap Creek, and Lake Fork on the west now contained between the Cochetopa Forest and the Gunnison Forest.

This association was formerly one of the strongest in its opposition to the Service and its policies, and the present resolution is an index of the general change in sentiment occurring throughout the West.

A committee was appointed to draft a resolution and present it to the general meeting of the association to be held there. This committee was instructed to wire the Commissioner of the General Land Office, requesting an immediate examination and report of modifications and additions of stock driveways leading to the Forest and an additional resolution requesting that rigid inspection be made on all stock raising homesteads on which final proof is submitted, the claim being made that many of these homesteads are going to patent without compliance with the law.

Planting on the Pike: A total of 765 acres, consisting mostly of Douglas fir and Engelmann spruce, was planted on the Pike Forest during the past spring. There were planted 605,880 trees, or an average of 792 per acre. The average cost per acre amounted to $17.72, which is higher than the average for the Pike Forest. This high cost is due to the heavy transportation charges incurred in hiring special trains on the Pike's Peak Cog Road to take the trees and equipment to the area. The cost was also increased because of the very rough and brushy areas planted. This completes the planting on the east face of Pike's Peak.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Large Sale on Coconino: The Forester has approved the advertisement of 81,000,000 feet of timber on the Coconino National Forest. The advertisement is to be run for a period of 60 days in local papers and trade journals. The advertised price is $2.25. The feature of the sale is the proposed cooperative deposit for intensive fire patrol in lieu of brush disposal. This will be the first experiment of this kind undertaken in the District.

Cooperation on Wildcat Fire: Dr. S. Earl Taylor of Holbrook, Arizona, according to the Sitgreaves Bulletin, furnished a truck for hauling supplies to the Wildcat Fire and when asked to present his bill replied in part as follows: "We are very glad indeed to be of any possible service to your department in connection with this fire and I personally have such a high appreciation of what you and others are doing for conserving the forests of the nation that I very much prefer not to present any bill. Unless, therefore, there is some reason from a departmental standpoint why you prefer to have a bill presented, I wish you would consider the use of our truck as a very willing contribution on our part toward the work for preserving the magnificent forests of Arizona." Supervisor Roberts, however, later discharged the obligation in proper manner without hurting the feelings of this splendid cooperator and so remains in position to call upon him again in case of need.

Indian Lore and Curios: The Coconino reports a new kind of use. An Apache Indian known as Indian Miller, has a camp near Walnut Canyon. "He has an Indian tepee and has collected quite a bunch of curios, including different species of horned toads, snakes, a Gila monster, etc., etc. He lectures to the tourists on the fauna of the Southwest, and also gives a very interesting talk on the cliff dwellers and prehistoric settlers in general. Many people consider him of more interest than the cliff dwellings themselves. He takes an offering of 25¢ per head from those who visit his Indian museum and listen to his talk. In case people are unable to pay he does not protest." Since this is a business project it will be covered by a charge permit.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

A Tale with a Moral: On a recent timber sale inspection on application for cancellation of agreement, it developed that the sale could be cancelled on the application of the purchaser without damage except an amount necessary to cover the cost of re-sale. The reason for this condition was that the officer in charge of the sale had so kept up his current administration that there was good utilization, the brush was completely disposed of, all marked trees had been cut, no unmarked trees had been cut and the logging had progressed regularly from the creek bottom to the tops of the ridges and with the improvements made in road construction, the remaining timber is at least as valuable and as salable as was the original stand of timber. Moral; current sale administration beats all of our penalty contract clauses a thousand ways from Sunday.

The Outlook for DeLong's Children: Ranger Delong of the Kaibab, or more particularly Ranger Delong's children, featured in an article which appeared in the last issue of the Outlook magazine. The article was by Dr. Frank Waugh, Recreational Engineer who visited the Kaibab last summer. It pictures Delong's children being deprived of the wonderful advantages of the movies, but at the same time they are living a life among deer, white tailed squirrels and wild horses, that in itself makes a movie.

On Being a Ranger: Supervisor Olsen caught his boys smoking, or trying to smoke, some cigarettes that they had picked up at a neighbor's house. "Boys," he warned them, "if you smoke those things you will never be great big smart men, and you cannot learn as fast as the boys that don't smoke when you go to school."

"That's all right, dad," the boys answered, "We're not going to school, we're just going to grow up and be Forest Rangers."

DISTRICT 5 - CALIFORNIA DISTRICT

Another Jolt for Horatio: Mr. R. W. Ayres, who was in the office yesterday, vouches for a most remarkable incident which was called to his attention by one of the loggers of the Fruit Growers' Supply Company, and which he at once personally investigated. On June 25, 1923, a 110-foot broken-top white fir tree was felled which appeared to have been fire-killed, as it was standing in a burnt-over area. When it fell, there was a solid butt log 20 feet long and about 5 feet in diameter, and above that the whole tree simply split into strips. Upon investigation it was found that the 90-foot upper section of the tree was nothing but a hollow cylinder with walls about 4 inches thick, and that the heart had been entirely consumed by fire, which was still burning at the bottom of this natural chimney. There were no lightning scars and no sign of rot, and the tree stood at least 600 feet from any road or railroad; the only solution of the mystery therefore seemed to be that at the time this area was burned over, September 3, 1922, fire had lodged in the broken top and had slowly eaten its way downward, taking nearly ten months to consume the 90-foot column. Shortly after observing this phenomenon Mr. Ayres heard of a similar occurrence, and has come to the conclusion that this may explain some of the unaccountable fires that have puzzled woodsmen in the past. A tree burned in this manner could easily be blown down by a high wind and thus set fire to the surrounding forest.

DISTRICT 5 (Continued)

High Voltage Lines on the Sierra: The transmission lines of the Southern California Edison Company from the Pineridge District carry the highest voltage in the world - 220,000.

Packers' Association Organized: The Huntington Lake Packers' Association was recently organized to "guard, promote, and protect the interests of those engaged in the business of packing and horse transportation." This is the first packers' association to be organized in this district and probably in the entire Service. If any field officers are interested they can obtain further information by writing to the District Forester.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Heavy Stuff: Klement & Kennedy, operating on their sale of timber on the Snoqualmie Forest, have installed one of the largest Lidgerwood outfits in the country. The weight of the machine is 110,000 pounds. The wire to rig the machine weighs 90,000 pounds, and is 40,300 feet in length. It is estimated that this rig will skid 2,000,000 feet of logs per month when hauling from 1,500 to 2,000 feet, and three to three and a half million when hauling from 1,000 to 1,500 feet. The machine is made of cast steel throughout with structural steel bed frame. Six drums are used. The boiler is said to be the largest ever put on a donkey engine. It is 76 in. by 144 in., and oblong in shape.--W.A.S.

Boy Scout Contacts: Forest Examiner A. A. Griffin of the Rainier has been designated as expert examiner in Conservation and Forestry for the Tacoma Council of the Boy Scouts of America. He will give the quizzes and issue certificates to the candidates for these two Merit Badges.

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U. S. FOREST SERVICE

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USING THE ACCRETION BORER IN STUMP ANALYSES

By Hermann Krauch, Fort Valley Experiment Station

In making stump analyses of old trees it is generally very difficult to count the rings on the outer side of the stump. To do so it is necessary to prepare a perfectly smooth surface and this takes considerable time. Moreover, making counts of rings on a pitchy stump or in the glaring sun is not a very agreeable job. It has therefore occurred to the writer that a core could be extracted from the outer part of the stump by means of an accretion borer and the rings of that portion counted at any convenient place. I do not know whether some one has already hit on this simple scheme or not, but it seems well worth while to call attention to it.

We have lately been informed that an accretion borer 14 inches to 16 inches long can be secured. Such an instrument will enable us to secure cores which reach to the center of many stumps. This, however, will probably not prove to be a practical plan so long as the inner rings of the stumps can be counted with ease.

PALATABILITY - WHAT IS IT?

By Leland S. Smith, Modoc

The dictionary defines palatability as: Agreeable to the palate or taste; savory.

As there is considerable difference of opinion among Forest Officers on the question of palatability of browse species for various classes of stock, the following is being sent in for comment.

There are several species of brush on the Modoc - Cercocarpus and Amelanchier, which on certain Forests are considered as excellent browse. Amelanchier, or serviceberry, is considered on the "East Side" Forests of D-5 especially as "good to excellent" browse, depending on locality and class of stock, and mahogany, particularly the broadleaf species, Cercocarpus parvifolius, is considered excellent browse and "highly palatable" or "relished by stock and eaten closely."

In this region the question arises, "Is everything eaten by stock to be considered palatable?"

In 1917-18 considerable value was given to Cercocarpus ledifolius and Amelanchier alnifolia. Since then, however, this value has been reduced to the point where, if the main species is mahogany in a browse type or serviceberry in a timber-browse type, very small value is given, or none at all, for summer range, which is the only season we are concerned with.

While it is known, of course, that in California horses have been wintered and pulled through in fair shape on mahogany, and, due to lack of hay, cattle have been fed on chopped mahogany boughs in winter, such a fact is not considered sufficient evidence to warrant giving it much value for summer grazing.

In arriving at a palatability factor applicable to grazing reconnaissance where the figures are to be applied to summer grazing, it is felt that no browse should be given a high figure where it is fed only in winter, or only when other forage is lacking, since to do so would lead to overstocking.

PALATABILITY - WHAT IS IT? (Concluded)

In case of browse species classed as good to excellent forage for any stock, we have on the Modoc bitterbrush, wild plum and others, which are consistently cropped close on all ranges generally in the fall, but to some extent in the spring. It is seldom that they attain much height growth except in more or less inaccessible localities or regions far from water, where it is found higher than a man on horseback. On the other hand, in all parts of the Forest we find both mahogany and service, from low bushes a foot or more to 16 feet high and 2" to 4" in diameter, with no evidence of cropping. It would seem that where a country is as fully stocked as this region is and has been that were these species as palatable as formerly considered, they would not have been able to reach such growth. On all but a few allotments these species are not only ungrazed, but are hardly touched. The stock do not crop such browse species as a rule till there is a lack of all other forage, then they have to.

The question to my mind is, "Are we justified in allowing for this forced or possible utilization in arriving at the grazing capacity of a range?"

It has been said that as yet we know very little about the value and capacity of brush land for C&H. Do we want to carry our capacity studies so far that we can say that stock can be forced to eat such and such browse?

Do we want to stock a browse range composed of such species of low palatability to a carrying capacity which was based on such conclusions?

IT'S TIME FOR A NEW "SURGE"

By M. A. Benedict, Sierra

The best thought and effort of every Forest officer in the Service has been directed to the cutting down of our losses from fire, and while we have some distance yet to go to satisfy ourselves that the protection we are delivering is adequate, yet I do not believe there will be any startling increase in suppression efficiency. It has largely settled down to a question of personnel. Personally, I feel that we can never attain a high degree of efficiency when we must depend as we do upon a constantly changing short-term force. It stands to reason that in a highly specialized work no organization can be consistently effective when the District Ranger or his protective force are new to their job. We can develop the most detailed plans on earth, but back of all plans we must have some one who has training and experience to put them into effect.

Can anyone imagine a city fire department hiring a chief or a fireman without previous training, or without giving him training and a lot of it? Can you imagine them hiring a man for four months of the year and expecting the underwriters to give them the rating of an efficient organization? We do it and more, for our firemen are widely scattered and "on their own" in many suppression jobs. The wonder of it is that we get by at all.

Fire is a spectacular thing and the losses are like a wart on your nose - you can't help seeing them. For that reason I believe we are overlooking another cause of loss simply because it doesn't hit us hard enough to make an impression. I refer to our losses from bugs. In all our yellow pine stands we find the work of the Dendroctonus brevicomis, or pine beetle, and he is a persistent worker even when he is not present in epidemic numbers. It is estimated that under normal conditions he inflicts a loss of perhaps 50 M feet per section in timber that runs 10 or 12 million to that unit. That means only 10 or 20 trees per section, and the forest officer who has not had much experience in "bug" work will hardly notice it. If they, the bugs, get on the rampage and reach the epidemic stage, the losses will run up to 40 to 50 or more trees per section, and then we commence to take notice. Visualize, if you will, the endemic loss grouped in a single place, as you see it in a fire. Imagine every section in your yellow pine type having about 2 acres swept clean every year. You certainly wouldn't ask the District Forester to hang any fire medals on you for such a record, but that is what is happening. I venture to say the California Forest lost more from bugs in the Upper Lake District last year than they have lost from fire in the last ten years, including the Grindstone fire. On the Sierra we have lost more from bugs on the Chiquito project alone in the last four years than we have from fire over the entire Forest for ten years.

IT'S TIME FOR A NEW "SURGE" (Concluded)

Can we expect to raise timber with a loss like this eating into our forest capital? On a hundred year rotation it probably means a loss of 25 per cent. That means that one-fourth of our yellow pine type is idle because of this one menace. What's the answer?

SHORT SKIRTS AND LANDSCAPES

By F. W. Cleator, D-6

"Short skirts" is what the ranger proffered when I asked what he thought about the grove of little trees on the camping ground, all carefully limbed, each surmounted with its little tuft of foliage.

Are we to follow the style of women's dress in trimming trees on camping grounds and ranger stations? I have reason to believe that there is some disposition to copy the female vogue of the past few seasons from observations made on a recent field trip of two months on three Forests.

The particular forester who named the style admitted that he was not responsible for the trimming and didn't exactly admire the looks of it, and believed that skirts were coming down anyway. Passing the buck, of course, yet neither of us could suggest a practical remedy for replacing the branches.

A solitary example of this kind of treatment would call for little more than some casual advice or a memo. to the surgeon who had performed the operation, but there were so many places with similar appearances that I began to figure that some Forests must be specializing in it, and to wonder how far the infection had spread outside.

I noticed that resort areas and summer home areas in the same region were treated similarly, or even more so. A natural grouping of brush and reproduction, untouched, is a very beautiful and attractive asset. Nature does it about as nearly correct as it can be done.

What is the result of the "high skirt" method? Crooked boles, knotty, gnarling, twisted effects, much like it may be with some women. In other cases we do get a geometrically perfect pattern, a fine tooth harrow upside down - good silviculture probably, but poor landscaping.

Here is a good, safe, general rule to follow: When you stand with ax in hand, appraising the seedling, sapling, or brush, either trim it off at the ground level or let it alone. This does not refer to larger trees which must be trimmed to allow people to congregate underneath.

Another suggestion is to leave some natural screens and barriers or hedges on a camping ground. Perhaps a large, mossy log will help to serve the purpose. It is much better than to open it all into one large chamber. Campers make of the camp ground their temporary home. We all like a measure of seclusion wherever we are. In town we enjoy going in a big mob to a picture show or to a funeral or a wedding, but we wouldn't care to sleep there even if they furnished tents. Sometimes two or three families, or the Ladies' Aid, would like to camp together. All right, we'll have one or more clearings for larger parties. We can not guarantee to suit any and every crowd and every occasion, but we can bat a good average by careful planning. If father can't go barefoot, or mother can't kick the dog and the children without being seen by the public they are going to move on to a cozy little nook somewhere, close to a heck of a big fire menace.

PAUL BUNYAN'S EXPLOITS (Continued)

Chapter XII.

Cliff Dwellings Were Chuck Boxes

Archaeologists have long raised a hubbub over what they call "cliff dwellings" and "ancient ruins," and have advanced quaint hypotheses to explain their origin. This mystery is now cleared up. Maps and documents left by Ranger Bunyan conclusively prove that these houses and caves were chuck boxes, wherein he stored emergency rations for his flying squadrons of husky fire fighters.

We will admit - as a sop to the archaeologists and other pseudo-scientists - that these chuck boxes were perhaps later occupied by men of the stone age,- hence the remnants of stone implements and pottery; but it is hoped that these revelations will forever end the volumes of drivel that have been heaped upon the world's bookshelves about a subject that is really very simple, if these yarns are to be believed.

Chapter XIII.

The First Bone Dry Edict

The cause of the semiaridity of the southwestern climate is one of those scientific puzzles that has at once fascinated and baffled the greatest savants. It is for this reason that we take a special pleasure in unravelling the mystery and imputing the effect to its real cause - Ranger Bunyan.

From his fragmentary diary it can be deduced that in the era of his Rangership there arose a great world war which was caused primarily by the efforts of a remote ancestor of Senacherib I to spread Assyrian kultur among the Aztecs.

During this war the North American continent was swept by a wave of moral reform, and an edict broadcast to the effect that "the country must be bone dry."

Now Paul liked his mug of ale. Besides he was a clever fellow. He succeeded in intercepting this message, which was destined for the police, and roguishly delivered it to a guileless old climatologist who was in charge of the U. S. Weather Bureau at Tezcucazcopopocatapetl (now Yuma, Arizona). The old fellow interpreted the message literally, and the resultant drouth was appalling. In a year the magnificent forests of the region were blackened skeletons, and in a few years had almost totally disappeared except on the mountain tops. It was only when Paul, backed by a committee of the Cattle Barons' Union, threatened physical violence that the old man relented and permitted those slight showers that still fall in alternate years on most of the mountains and some of the plains of Arizona and New Mexico.

(To Be Continued)

FIRST CALIFORNIA FIRE PREVENTION ORDER

The first legislation against forest fires in California was in the form of a proclamation issued by Governor Jose Joaquin Arrillaga, under date of May 31, 1793, from Santa Barbara. It was enclosed in a letter which he sent Father Presidente Lasuen, who was stationed at Mission San Carlos, and as the successor of Father Junipera Serra was the head of the California missions.

It appears that in the early days Indians, Christians and Gentiles had been careless in starting fires. Part of Governor Arrillaga's letter to Father Lasuen is as follows:

"About the serious damages that result from fires which every year the Indians, Christians and Gentiles start in the fields, etc., I have taken steps to publish the following proclamation. I forward it to your reverence with the petition and request that you be pleased to make it known to all the Reverend Missionaries, in order that on their part they contribute to this just measure, and that they threaten the Christian Indians with rigors of justice in case fires are started, etc."

According to Father Englehardt's history, Father Lasuen accordingly sent a circular to all the missionaries with instructions to publish the proclamation, to place a copy in the archives and to republish it annually.

This proclamation is said by Father Englehardt to have been published or read each year by the missionaries up to 1804, the year that Governor Jose Joaquin Arrillaga died.

No penalties were fixed in the proclamation, but punishment was threatened for violation of the executive order.

From the Santa Barbara Morning Press.

WASHINGTON NOTES

Spring Fires in Pennsylvania: That eastern States have fire troubles of no small proportion, and that fires during the spring of 1923 were of more than ordinary severity, are two facts brought out by the fire statistics for Pennsylvania. That State had 2,766 fires during the period from January 1 to June 1. The area burned totaled 321,085 acres, of which 9,258 acres belonged to the State. The damage is placed at $687,372 and the cost of fighting the fires at $107,687.

Tree-planting Records Broken in New York State: All previous records in planting forest trees on private land in New York State were eclipsed during the spring season just passed, according to an announcement by the New York State College of Forestry. The increase in reforestation by individuals and corporations is proof of a growing conviction on the part of landowners of the necessity for planting forest trees on idle land to provide future timber. It is also an indication that the profits to be derived from reforestation are appealing more and more to the people.

A record of trees planted in New York since 1911 on public and private land is interesting in that it shows the active and inactive localities in this conservation work. The total number of trees planted in the State of New York since 1911, as far as it is possible to tabulate them, is 56,691,691. During the war, reforestation fell off perceptibly but has recovered, and this spring broke all records with regard to private land. The addition of trees to be set out this fall will undoubtedly bring the total for the year beyond all previous planting operations on both public and private holdings.

Lumbermen Plan to Fight Blister Rust: The Northwestern Lumbermen's Association has mailed letters to 4,200 retail lumber dealers in Minnesota, North Dakota, South Dakota and Iowa, asking for a contribution of $5 from each of them for the purpose of conducting a campaign against blister rust.

--From the Pennsylvania Service Letter.

A New Book on the World's Forest Resources by Zon and Sparhawk: A new forestry book entitled "Forest Resources of the World," by Raphael Zon and William N. Sparhawk of the Washington office, with an introduction by Gifford Pinchot, is ready for distribution. It is published in two volumes by McGraw-Hill Book Company, Penn Terminal Building, New York City. It contains 997 pages (size 6 x 9) and 16 colored maps. The price is $12. It can be ordered through any bookstore. The next Service Bulletin will contain a review of the two volumes.

Why the Bulletin Got Twisted As to Dates: No doubt everyone noticed that the July 16 issue of the Service Bulletin was distributed ahead of the July 9 issue and marveled thereat. However, there is no mystery about it. It's simply another case of Forest Service proficiency. The mimeograph work on the July 9 issue was performed at the Division of Publications and was subjected to numerous delays, whereas the July 16 issue was mimeographed by the regular, highly-talented, and industrious Forest Service force, consisting of Miss Selma Hadden and Mr. Joe Santucci, and consequently was ready for mailing at the usual time.

New Ranger School in New York: A new ranger school, a branch of the New York State College of Forestry at Syracuse, is to be located near the side of the old building at Cranberry Lake in the Adirondacks.

The ranger school is designed to furnish a preliminary forestry education to qualify one for forest ranger, or forest guard and other positions in the management of forests. The course covers a period without any vacations from March to December, thus giving the student forest experience in all seasons of the year. Some students take this training before entering the regular professional courses at the College of Forestry, Syracuse.

Let's Make It 100 Per Cent! Forest officers are still obeying the urge to write. Twenty-seven of the 34 articles by Department workers listed in The Official Record of July 11 as appearing in current periodicals are by members of the Service. This is nearly a perfect score!

FOREST PRODUCTS LABORATORY

University Authorities Authorized to Deed Land for Laboratory: A bill whereby the regents of the University of Wisconsin are authorized to give land for the Forest Products Laboratory to the Government was recently enacted by the State legislature. This provides that land adjudged suitable for the Laboratory, by the Forest Service and the university, shall be deeded to the Government whenever the Federal authorities shall have available funds for the erection of such laboratories and shall have decided to locate them at Madison.

Nation-wide Test of Use of Paint on Wood: To determine the relative durability of common paints on different kinds of wood and how best to paint the different species, fences are to be erected at almost a dozen different places throughout the United States by the Forest Service in cooperation with the Paint Manufacturers' Association and several large paint companies, according to a working plan just made. Fences will probably be used or erected at Madison, Milwaukee, Sayville, Long Island, Seattle, Denver, and Fargo, North Dakota. While the chief object of this test is to study the behavior of paint on the different woods, this will also be the first time a nation-wide test has been made which will show the influence of different climates on the durability of paint.

Lumberjack Talk: Here is the way an injured woodsman explained how the accident in which he was hurt took place: "Oh, I was sky-hooking for old Simpson up the line, and I had a ground pig that was no good. He sent up a schoolma'am and she gunned, and I told him to throw a sag into her, but instead he gave her a St. Croix and could not hold her. I glommed for her and missed and fell across a log and cracked two of my slats."

"Save the Surface and You Save All": A painted surface covering seemingly sound wood in one step of a ladder in our yard apparently proves that when "you save the surface" you don't always "save all." Not only is the wood in part of the step spongy and without strength, but the fruiting body of the fungus is actually growing right through the painted surface.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Who Says That Sheepmen are Heartless? The following notice was posted by sheep permittees on the Colorado National Forest:

NOTICE

TO THE RESIDENTS OF ELDORA, NEDERLAND, AND COMMUNITY:-

SINCE PUTTING SHEEP ON THE RESERVES ABOVE ELDORA WE UNDERSTAND THAT THERE IS CONSIDERABLE DISAPPOINTMENT DUE TO THE DANGER OF DESTROYING THE BERRY CROP ESPECIALLY ON THE MILLS TRACT OF LAND THAT WE HAVE LEASED WHERE THE BERRIES GROW VERY ABUNDANTLY. WE HAVE CONCLUDED TO REMOVE THIS DISAPPOINTMENT ON YOUR PART. IT IS NOW OUR INTENTION TO HOLD THE STOCK OFF OF THIS TRACT UNTIL THE BERRIES ARE HARVESTED AND TO GIVE YOU THE PERMIT TO GO AND PICK THE BERRIES. THIS PERMIT DOES NOT APPLY TO ANY ONE INDIVIDUALLY BUT TO THE ENTIRE COMMUNITY ABOVE MENTIONED.

YOURS VERY TRULY,
MILES & ALUM.

Treating Plant Proposed on Cochetopa: The Trinchera Timber Company, operating on the Cochetopa Forest, is planning on the construction of a treating plant, probably at Salida, for the treatment of posts and poles for use in the Rocky Mountain region and some of the immediately eastern States. If this is established as planned, it will be the first treating plant of this character in the region and may mark the beginning of an increased use of local timber for poles and posts.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Call Him Smith: New Forest Assistant came out some time ago to inspect fire situation. While at station fire reported on Squaw Peak. In making one of those Paul Revere starts Mr. Smith forgot to shake his saddle blankets, and about the time Mr. Smith hit the saddle a scorpion under the blankets started to work on old pinto. In falling, Mr. Smith's canteen also dislodged and hit him on the back of the head. When Smith came to (he being one of our best pencil artists) he entered on his inspection sheet under condition of horses - D____fast on the get away but A - L - of a long way from being standardized.

Forest Service Gets Honors in Parade: A Forest Service float designed by Mr. Cook of the District Office of Public Relations and built by him for the Santa Fe with the assistance of Forest Assistant Fred H. Miller and Ranger T. J. Ground was entered in the big parade at the Ninth Annual Cowboys' Reunion at Las Vegas, New Mexico, July 2. Three prizes were offered by the Reunion Association for best floats. The Forest Service did not, of course, compete for a money prize, but the judges awarded second place to the float and complimented the Service on the clear-cut message conveyed by the make-up. First honor was taken by a float entered by the Montezuma College. It is understood the award earned by the Forest Service float was carried on down to the contestant next in line.

Senora Plans for Forestry Service: According to advice received here, Mexican officials are planning to organize a forestry service to preserve the timber areas and to fight destructive fires. This information was received by the Nogales Chamber of Commerce from General Eduardo Garcia, commander of the Sonora Fiscal Guards, who stated that government interests in Mexico were looking into the matter thoroughly and that organized protection of the forests could be expected at an early date. All members of the Fiscales have been ordered to cooperate with the United States forestry service in every possible manner.

Brush Disposal Experiments: In addition to the standard practice of piling and burning, lopping and scattering and pulling, with fire lines piled and burned, the following experiments are either under way or contemplated in the near future. 1. Piling and burning through cooperative deposits where the Service does the actual work. 2. What may be termed "protective burning" where the brush is piled for a distance of 50 feet around all standing trees and clumps of reproduction, the actual work to be done by the Service through cooperative deposits. 3. Intensive fire patrol in lieu of brush disposal. Under this plan standard fire lines will be constructed and an intensive fire patrol will be maintained for a number of years by cooperative deposits for the operator. With the result of these experiments known and analyzed, we should be in a fair way to solve the brush disposal problem in this District.

DISTRICT 5 - CALIFORNIA DISTRICT

Clause Concerning Sanding of Locomotive Flues Inserted in Timber Sale Contract: The Acting District Forester recently approved a timber sale contract with the Swayne Lumber Company, involving 167,000,000 feet b. m., to be cut before December 31, 1938. About 50 per cent of the stumpage involved is white and red fir and the logging conditions are difficult. This is reflected in the stumpage rates, which are as follows: yellow, Jeffrey and white pine, $3 per M; sugar pine $3.50 per M; white fir, lodgepole pine, Douglas fir and incense cedar, $1 per M. The following conditions, which were somewhat of an innovation, were inserted in this contract:

"The purchaser shall designate definite points on his main line and spur tracks where the sanding of locomotive boiler flues shall be done. At such points the purchaser shall construct and keep clear fire lines on each side of the track, such lines to be at least 3 feet wide and located approximately 50 feet from the center line of the track. The area between the track and fire lines shall be cleared of inflammable material by burning in a manner and at a time satisfactory to the Forest officer in charge.

"The purchaser further agrees that if, in the judgment of the Forest Supervisor, the plan for sanding of flues as outlined proves inadequate to prevent the setting out of fires along his railroad track as a result of his railroad operations, he will construct such fire lines and clear his right of way of all inflammable material at such points as may be designated by the Forest officer in charge on or near Government land."

The system of clearing definite points for sanding locomotive flues along logging railroad tracks has been experimented with in the Pacific Northwest and is recognized there as a very valuable fire prevention measure. It seems desirable for other Forests to consider the use of this clause in connection with contracts involving logging railroads, particularly where considerable trouble from railroad fires has been experienced or is anticipated.

This Shows Some Class: Los Angeles bounty has just voted an appropriation covering $20,000 for trail work on the Angeles Forest, $25,000 for public latrines, the majority of which will be placed on the Angeles canyons, eight deputy sheriffs to be mounted and stationed in the same locality, who will also act as rangers and work under the supervision of the Forest Service, and $90,000 for forestry work outside of the Forest. The county maintains a seven-acre nursery, and all stock raised is planted on the Angeles.--R.H.C.

DISTRICT 6 - NORTH PACIFIC DISTRICT

A Bear Story: District Ranger Davis of the Cascadia District, Santiam Forest, gained quite a reputation as a mighty hunter when he recently dispatched a large bear with the aid of a revolver, pocket knife, and an ax. Mr. Davis states this was the largest bear he had ever seen; we will warrant that it looked that way to him at least.

Tree Lookout Left: On May 12 about half of the town of Sisters in the Deschutes Forest burned down, including Deputy Supervisor South's office and all of the equipment which was stored there. There were no forest officers in town at the time and nothing was saved.

Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

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A REVIEW OF "FOREST RESOURCES OF THE WORLD," the New Book written by Zon and Sparhawk

Rapid depletion of our timber supply has made it essential to know more about the forests and the timber requirements of other countries which may help in filling our future needs. Such information has just been made available through the publication of a comprehensive book on "Forest Resources of the World," by Raphael Zon and William N. Sparhawk of the Washington office. This work, which is in two volumes, contains approximately 1,000 pages, with 16 colored maps showing the distribution of the principal kinds of forest. It is published by the McGraw-Hill Book Company of New York and is on sale for $12, complete.

Many interesting facts are brought out. The growth of timber in the world is only two-thirds of the amount consumed. The timber supply, therefore, is steadily shrinking. The need for timber, on the other hand, is constantly increasing. At the rate of increase shown in recent years, the world's requirements for sawtimber will double in 50 years.

The United States consumes half of all the timber cut in the world, yet has less than one-tenth of the forest land. Exclusive of firewood, softwoods such as pines, firs, and spruces comprise three-fourths of all the timber used. These are very largely confined to the northern temperate regions, and the only large reserve supplies are in northern Europe, Siberia, western United States, and Canada. The tropical forests, while vast in extent and rich in valuable timber, contribute very little as yet to the world's needs, nor are they likely to do so for some time. Eventually, however, these forests will become exceedingly important. World commerce in timber, the bulk of which was softwoods from northern Europe and North America, amounted annually to $650,000,000 on the basis of prewar values.

The most pressing forest problem, from a world standpoint, is the necessity of providing adequate future supplies of softwood timber. This can be done by using all of the forest land for the continuous production of timber crops. At present, only 10 to 15 per cent of the world's timberland is so handled, while the rest is regarded as a mine, valuable only for the timber now standing on it.

The book is full of facts and statistics about the extent and kind of forests; cut, growth, and consumption of timber; timber trade and forest and secondary industries; forest ownership and legislation; all of which give the reader a clear conception of the forest situation of individual countries and of the world as a whole.

NEW RECORDS ESTABLISHED IN TIMBER SALE RECEIPTS

By Harry Irion, Washington

Receipts from timber sales during the fiscal year 1923 exceeded those for 1920, the next highest year, by $641,576.18. For the fourth quarter of 1923 they aggregated $807,884.57 - also a new record - a gain of $180,365.36 over the same period in 1920, the next highest fourth quarter.

NEW RECORDS ESTABLISHED IN TIMBER SALE RECEIPTS (Concluded)

A total gain of $860,896.84 was made over 1922 receipts, while the fourth quarter of 1923 exceeded that of 1922 by $185,442.36. With one exception, every district registered a gain over 1922, the increase for the entire Service being 48.4 per cent. To District 5, with an increase of 145.4 per cent, goes the palm for the best showing in this respect, the Alaskan forests coming next in order with a 73.1 per cent gain.

A detailed comparison of the 1922 and 1923 timber sale receipts is given in the following table:

District	Receipts from timber sales fiscal year 1923	Amount gain over previous fiscal year	Per cent of gain over previous year
1	$392,029.63	$31,287.25	8.7
2	242,335.79	42,404.01	21.2
3	175,468.65	48,229.05	37.9
4	83,746.85	1,556.82 (loss)	1.8 loss
5	902,752.26	534,844.82	145.4
6	652,829.46	155,699.85	31.3
7	139,279.98	27,684.71	24.8
8	52,801.46	22,303.97	73.1
Total	$2,641,244.08	$860,896.84	48.4

When complete cutting and sale reports are received and compiled for 1923, it is planned to add something about the amount of stumpage involved in last year's timber sale business. It is expected that final figures will establish other new sales records.

USE OF CHEMICAL FIRE EXTINGUISHER SAVES BUILDING

By J. A. Mitchell, Washington

Reference is made to Mr. Headley's article, "Hope Springs Eternal," in the July 16 issue of the Service Bulletin.

I can personally cite one instance where a Forest Service building was saved from destruction by fire by means of a chemical fire extinguisher. Back about 1916 a fire started in the wall of the main residence at the Feather River Experiment Station as the result of a defective fire place arch. The fire was discovered just as it was getting nicely started and was extinguished by the prompt use of a chemical extinguisher. No other means available would have served the purpose since the fire could only be reached by directing a stream of water through the opening between the stones in the fireplace arch. By means of the extinguisher, however, the fire was promptly out out and practically no damage resulted.

About six months later the farm house on an adjoining ranch caught fire and, while the Station force with all available fire extinguishers arrived too late to save the residence, the barn and out buildings, although catching fire a number of times from flying sparks, were saved by means of the extinguishers.

Another instance of the effective use of chemical fire extinguishers might be cited in connection with an experimental forest fire. In this instance a crown fire in a dense pole stand of second growth yellow pine was prevented by the timely use of a chemical fire extinguisher when ordinary methods of checking the fire had failed.

While no claim is made for the universal effectiveness of the chemical fire extinguisher, like any other specialized equipment, it has its place and should not be ignored or underrated as a valuable piece of fire fighting equipment.

BOAT SAVED BY CHEMICAL FIRE EXTINGUISHER

By J. C. Dort, D-5

In the Service Bulletin of July 16, 1923, Mr. Headley asks if there has been any instance when a chemical fire extinguisher resulted in saving a ranger station building from fire.

The writer was using Ranger 4, one of the Forest Service fleet in District 8, and on one occasion we had a back-fire from the engine that started a fire in cotton waste impregnated with oil. Almost instantly there was considerable flame and smoke in the engine room, but one shot from the Pyrene extinguisher immediately put out the fire. There is more or less oil and distillate floating around on top of the bilge water in the hold of any motor boat, and in our case if the fire had gotten down in the hold it would have been a very serious matter. There is always more or less leakage of oil and distillate around piping on a motor boat and floor boards and timbers become saturated with this. In this particular case water would not have been very effective in putting out the fire, and if this fire had gotten any kind of a start we probably would have lost the boat.

SOME EXAMPLES RIGHT AT HOME

By E. A. Sherman

The foregoing cases cited of buildings and boats saved by means of chemical extinguishers, in response to Mr. Headley's article asking if there were any such on record, recalls to my mind that for a very good example of this kind it is not necessary to wander afield. It is a matter of record that the Atlantic Building itself was saved from destruction by fire by the very means in question.

A fire started in Room 619 about 10.30 a. m., April 7, 1921. The doors of the room were closed and the flames made considerable headway before the noise and heat aroused suspicion. Word was sent to me that the building was on fire on the sixth floor. I rushed out to the hallway and pulled our fire gong. Of course everyone thought that it was merely a fire drill and with usual promptitude turned out quickly and the building was cleared. Meanwhile, however, Mr. Murphy had taken the fire extinguisher hanging on the wall across the hall from 619 and turned it on the blaze. Mr. Sparhawk had rushed down to the floor below and brought up another extinguisher. The first one, however, was sufficient to do the business and the second extinguisher was not turned on.

It is quite probable that without the chemical extinguisher the building would have been saved that day by the use of the regular fire hose which is ready to lay and apply on each floor in this building. The fact remains, however, that it was the chemical extinguisher that did the work.

Little more than a month later a second case occurred of a fire in this building being extinguished by the same means. About 12.45 p. m., May 23, 1921, a fire occurred in the waste paper chute in the Atlantic Building. The fire crew of this office responded and the fire was put out by the use of chemical extinguishers. A similar fire which occurred about 5.55 p. m., May 2, 1922, was suppressed by use of chemical extinguishers. In these two later instances there was little real danger to the building, but in the first case the danger was very real and the service rendered was very great.

There is no record of any fire having yet been extinguished in Mr. Headley's own office by this means.

PAUL BUNYAN'S EXPLOITS (Continued)

Chapter XIV.

The Origin of the Grand Canyon

After the climate of the Southwest had so unfortunately gone dry, the cattle barons were hard put to it to keep their herds from dying of thirst. For two or three years they hauled water in tanks from the Pacific Ocean, and by the process of artificial evaporation and condensation in cold pipes provided a supply of fresh waters for their cattle. The residual salt they threw away as refuse, which the cattle not having much else to eat greedily licked up, thus acquiring that inordinate appetite for salt that has caused such inconvenience and expense to all cowmen ever since.

PAUL BUNYAN'S EXPLOITS (Concluded)

This method of supplying water proved arduous and so Ranger Bunyan bethought himself of a scheme.

"Why not," said he, "dig a hole and collect rain water in it?"

Enlisting the support of the cattle barons, he wasted a huge amount of energy in excavating lofty mountain peaks, which have in later ages been incorrectly termed volcanoes. He soon found, however, that they were not successful simply for the reason that water could not flow into them. So he sought a depression in the surface of the earth, and dug a hole which was called by him a stock tank and by present day tourists the Grand Canyon. It is really a canyon now, for once in a heavy flood the waters broke through to the Gulf of California, and the stream which now trickles along the bottom of Paul's erstwhile pond is known as the Colorado River. The eroded remnants of the excavated earth, now known as the San Francisco Peaks, still form a considerable protuberance from the plateau of northern Arizona.

Chapter XV.

Paul "Landscapes" the Station

Paul's wife wanted a hedge in front of the Station, so Paul bethought himself of a patch of scrub evergreens of a species then known as Microdendron minimum variety parvum, but in later ages grandiloquently dubbed Sequoia sempervirens. Pulling up several handfuls of the larger ones, Paul planted them in a row and sat down to survey his handiwork. He was greatly pleased with himself, but when Mrs. Bunyan saw the hedge she waxed wroth, for the chickens could jump over the little trees without difficulty, and in fact had already trampled some of them down.

The good woman roundly berated Paul for not using more sizeable trees for the hedge. So Paul, with a perhaps unworthy peevishness, allowed the hedge to run wild. Indeed, dwarfed and battered remnants can still be seen to this day in the so-called Redwood Belt of California, where easily-amused tourists and loud-spoken native sons unite in exaggerated praises of trees that Mrs. Paul Bunyan found too poor for a hedgerow for her humble cottage.

THE END

Editor's Note: This is the last Paul Bunyan yarn to be deciphered from among the fragmentary memoirs found on Mt. McKinley. However, since Ranger Bunyan covered the country like a tent, it is more than likely that he left other scraps of paper in many forests which ought to be coming to light about now. If anybody has discovered some of Paul's writings, the Service Bulletin will be glad to give them the once-over. Free subscriptions to the Use Book will be the reward for sending in yarns about Paul and his gang.

O WONDERFUL HORSE!

"O horse, you are a wonderful thing; no buttons to push, no horn to honk; you start yourself, no clutch to slip; no spark to miss, no gears to strip; no license-buying every year, with plates to screw on front and rear; no gas bills climbing up each day, stealing the joy of life away; no speed cops chugging in your rear, yelling summons in your ear. Your inner tubes are all O.K., and, thank the Lord, they stay that way; your spark plugs never miss and fuss; your motor never makes us cuss. Your frame is good for many a mile; your body never changes style. Your wants are few and easy met; you've something on the auto yet."--Ranger H. R. Elliott, of the Malheur, in American Forestry (Washington).

WASHINGTON NOTES

Louisiana Has New Commissioner of Conservation: Hon. Dudley Berwick is the new Commissioner of Conservation for Louisiana. Mr. Berwick's appointment to this position speaks well for the future of conservation in general and of forestry in particular.

WASHINGTON NOTES (Concluded)

The July issue of the Louisiana Conservation News prints a message from the new Commissioner, in which he outlines his policies and his ambitions for his department. Among other things Mr. Berwick stated that "in assuming the duties of Commissioner of Conservation it is my purpose to carry forward the conservation movement in all its phases in a way that will reflect credit upon the State of Louisiana."

Colonel Greeley returned from his trip with President Harding's party on Wednesday, August 1.

Receipts for Fiscal Year 1923: Net receipts for the fiscal year ended June 30, 1923, amounted to $5,335,818, which is an increase of about $267,290 over net receipts for the preceding fiscal year, which year also included deferred grazing fees. Not including deferred grazing payments, the receipts last year were $3,421,531. Timber sales, timber settlement, and timber trespass, show an increase over 1922 of $918,201, and Special Uses an increase of $12,318. All other activities show a decrease over 1922. The only trespass showing an increase is timber trespass, amounting to $11,827 in 1923 and $7,625 the preceding year. Timber sales increased in every District except District 4, which experienced a slight decrease. District five's timber sale receipts increased nearly 150 per cent; District 6 had an increase of $155,700, and the increases in other Districts run from $22,303 in District 8 to $48,229 in District 3. The total receipts for timber sales in all Districts amount to $2,641,244, an increase of about $860,897. The net grazing receipts for 1923 are $2,318,203, showing a decrease of over $615,000, due largely to the changes in requirements for payment of grazing fees. Grazing trespass receipts show a decrease of about $5,758.

Dr. Sampson Publishes Grazing Book: Dr. Arthur W. Sampson, formerly Director of the Great Basin Experiment Station, is the author of "Range and Pasture Management," which is the first volume of a series of three books on grazing matters. It is believed that the work will be of considerable value to men dealing with grazing.

Noted Swiss Forester Passes On: Notice has just been received that Professor Arnold Engler, Director of the Swiss Forest Experiment Station, died on July 15 at Zurich. Prof. Engler was known to many American foresters particularly through his study of the relation of forest cover to streamflow. The Wagon Wheel Gap experiment was modeled largely after the experiment initiated by Dr. Engler at Emmenthal, Switzerland.

FOREST PRODUCTS LABORATORY

Some Books on Paints and Varnishes and Wood Finishing: A technical note recently issued gives the names of 47 books on paints, varnishes, and wood finishing. One dozen of these books are selected as being of special interest to the practical man. Among these are: "House Painting," "Painting and Decorating," and another, "Automobile Painting," should be of special interest. Like other technical notes, this one, which is No. 195, may be had free of the Laboratory.

Orders for Dunlap's Forest Fire Hazard Indicators: Orders for four of the forest fire indicators invented by Mr. M. E. Dunlap were received here recently from the Director of the Priest River Experiment Station, who expects to give them a careful trial under various field conditions.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Natural Reproduction at Halsey: Several years ago a member of the Washington office who was greatly interested in the prospect of securing natural reproduction in the Halsey plantation offered a workman at the Bessey Nursery a dollar for each natural seedling that he could find in one of the older plantations. According to recent reports, if the offer still held good, the gentleman might be called upon for a large sum of money. On account of the unusually favorable moisture conditions during May, following a two-years' drought, a large number of jack pine seedlings have come up through the litter under the trees in the first plantation which was established at Halsey in 1903. These seedlings have evidently originated from seed which has been in forest litter for a number of years and were only waiting favorable moisture conditions to germinate. It will be interesting to see at the close of the season if the seedlings have been able to survive the usual August and September droughts.

Supervisor Kreutzer Serves Twenty-Five Years: August 10, 1923, marks the twenty-fifth year of active field duty for Wm. R. Kreutzer, Forest Supervisor of the Colorado, for it was on August 10, 1898, that Bill Kreutzer became a Forest Ranger in the United States Department of the Interior. Bill was assigned to the Plum Creek Forest Preserve, which is now a part of the Pike National Forest. He was required to furnish for the munificent sum of $40 per month his own horses, camp outfit and fire tools, and was required to remain on the reserve at all times and to put out all fires which occurred there, by his own efforts and such volunteer aid as he could enlist.--L.P.Brown.

Forest Service Cooperates with State Boards of Health: Cooperative agreements have been effected between the Forest Service and the State Boards of Health of both South Dakota and Wyoming, and all Forest officers given appointments as deputy State health officers. Arrangements were made for cooperation with the State Board of Colorado in 1920 and the result has been so satisfactory to both parties to the agreement that Wyoming and South Dakota were persuaded to join hands with the Service in an effort to improve the sanitary conditions in the mountain regions of the States. The interest of the States has been attracted to the mountain areas by reason of the increased influx of tourists and the intensive use of the watersheds of the principal towns and cities of the States. It is barely possible that the death of several people from typhoid fever, believed to have been contracted in Spearfish Canon within the Black Hills Forest, influenced the State Board of Health to enter into the cooperative agreement with the Service. Our officers now have authority to enforce the State laws and regulations of the Board of Health, and to date it has not been necessary in a single instance to make an arrest.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Three-Fourths of Fires are During Fire Season: In twelve years District 3 has had 6,500 fires. Four thousand eight hundred, or 75 per cent of them, have occurred during the recognized fire season May 1 to July 31. For proportion of fires during the fire season the forests show up as follows: Apache 86 per cent; Sitgreaves 84 per cent; Crook 83 per cent; Gila 81 per cent; Datil 80 per cent; Coconino 77 per cent; Tusayan 75 per cent; Santa Fe 75 per cent; Prescott, 75 per cent; Coronado 70 per cent; Manzano 82 per cent; Carson 61 per cent; Lincoln 55 per cent; and Tonto 50 per cent.

Advanced Study by D-3 Personnel: An inquiry throughout the District relative to advance training and outside study shows that in the past fiscal year twenty-five members of the District took some sort of formal training along definite lines. Five of these took leave without pay to attend colleges, working along forestry and grazing courses either undergraduate or postgraduate work. The other twenty took correspondence and night school work in a variety of subjects. Law engaged the attention of three of the correspondence school group, while civil engineering, architecture, business administration, drafting and public speaking took one each. One took a course in English, another attended night school and studied Spanish. Journalism, advanced accountancy, bookkeeping and advanced stenography complete the list of subjects into which district folks delved.

Coconino Lookouts Aid Flagstaff Fire Department: So nearly efficient have the Woody Mountain and Elden Mountain lookouts on the Coconino become this year that they have discovered two fires in the town of Flagstaff before the municipal fire department received word of them from other sources. Possibly here is another item of Public Service which can be added to our list.

Fire Dope in Ad Stories: Our publicity on fire prevention and recreational uses of the forests has a genuine appeal to the public if the use of Forest Service news material by advertisers may be accepted as evidence. There have been a number of instances where firms have followed our line of talk in their advertisements of sporting goods and outdoor clothing, but the latest and most elaborate is probably that of an auto supply company of Phoenix. In the July 7 issue of the Arizona Gazette appears an illustrated article four columns wide by twelve inches long entitled "Uncle Sam Opens National Forests for Tourists." Three cuts show a forest ranger telling campers the wrong and right way to make a camp fire and how to be sure it is out before leaving. There is a tree with a fire sign on it and so on. Several paragraphs of nearly orthodox information make up the text. Near the end the reader is ingeniously told that portable gasoline stoves are much safer than open camp fires and that these things as well as all other accessories of camp life may be conveniently purchased from the auto supply company.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Fire - 1923: It seems that the dangerous fire period in District 4 is just now beginning in earnest. A summary of the fire figures this season to date as reported by the Forests is as follows:

34 Class A fires
3 Class B fires
1 Class C fire
Total acreage reported burned, 7
Charges against fire fund, $49

The Class C fire mentioned occurred in the Grand Canyon National Park adjoining the Kaibab Forest, and the acreage burned and cost of suppression are not yet known. The Forests report a late wet season, but with increasing fire danger.

Summer School at Tony Grove R. S.: For the last few years the agricultural college at Logan has had a school for vocational students studying agriculture at the Tony Grove Ranger Station for a period of a few weeks during the summer. This year there were about thirty students. They are, of course, mostly interested in the Forest Service grazing work, and have had Grazing Examiner J. O. Stewart there giving them instructions along these lines. F. S. Baker visited the school Friday and Saturday and talked to them on the silvicultural side of forestry. Supervisor C. B. Arentson had already given them a lecture on National Forest administration.

Hot Stuff: The following letter, spelling and all, was received from a permittee. It speaks for itself:

"Dear Meester Supervisor: I got your letter about my 1922 grazomg fees. Now be pachunt. I ain't forget you. Plees wait. When sum fools pay me I pay you. If this wuz judgment day and you wuz no more prepaired to meet your Maker as I am to meet these fees you would sure have to go to hel. Trusting you will do this."

DISTRICT 5 - CALIFORNIA DISTRICT

"A Good Deed in a Naughty World": One of the finest groves of redwoods on the highway between Eureka and Crescent City has been deeded to the State by Mrs. Zipporah Russ of Ferndale as a memorial to her husband, Joseph Russ, who was a pioneer of Humboldt County. This highway passes through the most magnificent and largest stands of redwoods in the State, and the lovers of trees are seeking to save what amounts to only a narrow strip along this road; but sentiment is forgotten when the almighty dollar beckons, and some of the stateliest trees are already falling before the logger's ax.

He Can Qualify: In response to a questionnaire sent to the field to gain information regarding the amount of training received by each man, Ben Johnson of the Modoc unlimbers his soul as follows: "I ain't took no extry trainin' in books, 'cept out o' the Lit'ry Digest an' some o' Zane Grey's, but I had a heluva lot of trainin' on the Devilish Garden an' elsewhere, an' hev aquired sum new kuss words, if they will help any."

"The Tiger of France" is a Forester: More than a year ago Wythe Williams, writing from Paris of Clemenceau, whose home he had visited on the seacoast, told this story of the old man:

"But I love it," he said; "I love this place. I am of it. If one says one loves a woman, well, that is all; one can add nothing. It is like that when I say that I love this place where I was born."

He pointed to the forest. "I have watched that forest grow - these great pines. Eighty years ago there was not a single tree there." He stopped and picked a little flower from the sands - a delicate flower with exquisite perfume. "See, that grows here," he said, handing it to me. "It is called 'the pink of the dunes.' And there are immortelles too." He pointed about him. "And the heather - and over there by the house, you see, I am raising a plantation of pines from the sand."

He stopped speaking for a moment, then continued with one of the few touches of solemnity that I have ever heard from him. "I am almost eighty; but what if I die a year from now - or a month from now? I am going to give myself the pleasure of planting trees to see that they take root and grow."

DISTRICT 6 - NORTH PACIFIC DISTRICT

Going Strong: Some of the livestock associations of eastern Oregon believe in "going the whole hog or none." When they agree to cooperate they mean what they say. Witness the following letter from the Secretary of the Silver Creek Cattle and Horse Association (Ochoco) to "Mr. Cattleman":

"Dear Sir: At a meeting of the Silver Creek Cattle and Horse Asso. held here on April 12, the forestry officials, at the request of the local association, tendered you a grazing permit for the fiscal season for 300 head of cattle.

A copy of permits approved by the Department and furnished this association reveals the fact that you did not avail yourself of this opportunity to use a grazing permit.

In view of the fact that it costs us $1 per head to cover grazing fees, salting and herding expenses on each and every permitted animal we graze in the forest, and in view of the further fact that at the best your cattle will cause additional work and expense, not only in eating feed and salt that should go to permitted cattle, but by their effort to drift back to Harney, we feel that you should have taken this permit and assisted your neighbors and friends in meeting the expense of hiring a range herder.

You are doubtless aware of the fact that the cattle you turned loose along the forest boundary will drift into the forest along with the other cattle unless you make a definite effort to keep them out. With this certainty confronting us, we feel that it is only courteous for us to advise you now that since you do not care to secure a permit in order to protect our interests, it will be incumbent upon us to furnish the forestry department with proof of any trespass in case your cattle get in the forest."

Service Bulletin

U. S. FOREST SERVICE

(Contents Confidential)

Vol. VII, No. 33. Washington, D. C. August 13 & 20, 1923.

FOREST SERVICE AIDS PRESIDENTIAL PARTY AT TIME OF LATE PRESIDENT HARDING'S DEATH

The Forest Service, like every other agency of the Government, regretted the passing on of the late President Harding deeply and with the utmost sincerity. In his death the Forest Service lost not only a kindly Chief Executive but an interested friend as well.

Fortunately, the Forest Service was in a position to render aid to Secretary Wallace and the Presidential party in San Francisco during those trying days. A letter to The Forester from District Forester Redington tells the whole story and the SERVICE BULLETIN is glad to publish Mr. Redington's letter in full. It shows that the Service was again ready and dependable in the face of an emergency.

District Forester Redington's Letter

August 7, 1923.

The Forester:

As is already known, the late President Harding because of illness came direct from Seattle to San Francisco, cutting out his Yosemite trip, and took to his bed in the Palace Hotel on the morning of July 29. On Monday morning early I endeavored to get in touch with the party in order to determine if Col. Greeley had come south, but was unable to do so. I went up at noon to the Commercial Club to attend a meeting of the Federal Business Association and found that E. A. Beals of the Weather Bureau had gotten hold of the Secretary of Agriculture and had brought him over to this luncheon. He was guest of honor together with the Commissioner of the General Land Office, ex-Governor Spry, and Congressman McLafferty. I learned from the Secretary there that Col. Greeley had left the party at Seattle.

On Tuesday morning at 11 o'clock the Departmental Club arranged that the Secretary meet all of the employees of the Department located in the Bay cities and Mr. Wallace spoke most interestingly for about 10 minutes to nearly 200 people at that time. He then introduced the Speaker of the House, Mr. Gillette, who expressed his satisfaction at meeting some of the people who are working for the Department headed by Secretary Wallace. It was then my pleasure to go with the Secretary and Speaker for a short trip to the dock of the Matson Navigation Company where the work of the Federal Horticultural Inspection Board was looked over. At 2 p. m., by request of the stockmen, and the suggestion of Secretary Wallace, Mr. Nelson and I went up to the Palace Hotel where the Secretary and the Commissioner of the General Land Office met the officials of the Sheep & Cattle Associations of California to discuss the problems confronting the industry. Vernon Metcalf of Nevada, Secretary of the Nevada Stockmen's Association, made a statement which I believe is similar to the one he made to Col. Greeley at Denver. The stockmen pleaded for the appointment of a Commission to study the interrelated questions of forest and public range control and administration.

The Secretary several times on this day recorded his satisfaction at the improvement in the condition of the President who, on Monday, had had a slight pneumonic trouble develop. Mr. Wallace even asked me to make arrangements to take him by motor from San Francisco to Lake Tahoe and Truckee whence he expected to take the Overland Limited going East.

On Wednesday noon, August 1, Mr. Dechant, Secretary of the Departmental Club, and myself called on Secretary Wallace at the Palace Hotel and escorted him to the Commercial Club where 37 members of this organization greeted him. Following the luncheon the Secretary asked the various heads of the Bureaus to discuss with him any problems which they had on their minds and Mr. Beals raised the question of payment of salaries and accounts of the Bureaus (who now have to transact their business with Washington) through a local Fiscal Agent. The crying need of more funds to take care of the sanitation problem on the National Forests was also discussed. The problems concerning other Bureaus were also discussed including the question of increasing the weight of matter which could be carried under frank through the mails. Then followed an informal talk by Secretary Wallace regarding his impressions of Alaska and everyone agreed that as a word picture it was a very remarkable one of conditions and problems in that Territory. Following this luncheon, the Secretary went to the office of the Bureau of Public Roads, then returned to the Palace Hotel.

At 11 o'clock on Thursday, August 2, I called on Secretary Wallace to ascertain his views in regard to the proposed trip to Lake Tahoe. He said that he could not then decide but indicated his hope that the trip might be made, expressing again his satisfaction over the President's condition.

The following is a record of my diary for August 3 which will give some of the incidents of the day following the passing of our honored and beloved President:

"Last night at 7.20, the President of the United States, Warren G. Harding, was stricken with apoplexy in his suite at the Palace Hotel, San Francisco. The Secretary of Agriculture, Henry C. Wallace, was good enough to call me up at about 9 o'clock to give me the news and he indicated that he would want some work done which required the services of a man stenographer. I secured the services of Mr. Cary Hill and together we went over to San Francisco arriving there at midnight, talking briefly with Secretary Wallace and with Mr. Judson Welliver, one of the President's secretaries. It was ascertained that what was needed were typists rather than stenographers, and we left for home with the agreement that we would be prepared the next morning to furnish a number of typists for the work that needed to be done.

At 6 o'clock this morning various girls in the office were called up by Deering and myself and asked to be at the office by 7.30. Arrived at the office at 7.30 but received no call to give assistance until about 10 o'clock when with Hess, Mrs. Decker, Miss Davies, and Miss Vinther, I repaired to the Palace Hotel and under the direction of Mr. Welliver worked until 5 o'clock in the afternoon. Nelson and Fair also did some work in this connection. The Secretary personally expressed his appreciation of the assistance rendered, commending the girls on their excellent work and Mr. Welliver seemed also to be appreciative.

A brief funeral service was held in the President's suite at 5 o'clock. At 6 o'clock the casket was borne through crowded streets to Third and Townsend Streets, where it was placed on board the special train which left for Washington at 7 p. m.

Our work at the Palace consisted of copying all the messages of condolence which had been sent to Mrs. Harding and to Secretary Christian. Literally every nation in the world and almost every personage of any importance in this country had sent in these telegrams. Besides these, all the health bulletins issued by the consulting physicians were typed. The Vice President, Calvin Coolidge, took the oath of office early this morning at his home in Plymouth, Vermont, and then started on his way to Washington."

We, naturally, were only too glad to be of any help and everyone in the office stayed voluntarily almost through the day to see if there was something which they could do.

Very truly yours,
PAUL G. REDINGTON,
District Forester.

ANOTHER ANSWER TO MR. HEADLEY'S FIRE EXTINGUISHER ARTICLE

By Frank P. Cunningham, Sequoia

Assistant Forester Headley stated in his article in the Service Bulletin of July 16 that no case is known to him where a chemical fire extinguisher has saved a building. All yearlong ranger dwellings on the Sequoia National Forest are equipped with an Underwriters extinguisher. About August 1916, Mrs. Lyons discovered a fire in the house the Lyons family occupied at the Supervisor's headquarters. Lyons and myself were in the office and responded promptly to the alarm, he with the extinguisher for his house and I with the one for the office building. We found the pantry, a room 6 x 12 feet, a solid blaze. We used both extinguishers and before one-half the charge in each was exhausted had the fire totally extinguished.

This fire occurred at a time when our water supply was very low and the pressure very light. It was our opinion that the building would have been destroyed if we had been dependent on water and had it burned, possibly all the other buildings at headquarters would have gone also. The fire would probably have spread to the dry grass on the surrounding hills with a resultant serious forest fire and danger to the town of Hot Springs and surrounding ranch buildings. I was under the impression this case was officially reported to the District office.

The log cabin at headquarters caught on fire during the winter of 1919, due to faulty construction of the fireplace. The extinguisher quickly put the fire out. This fire could have been handled successfully with water.

In 1921, when recharging the extinguishers at headquarters, we discovered that one had been overlooked and not recharged since 1916. We tried it and found it operated as good as those charged in 1920. I do not believe it safe to depend on this, however. They should be recharged every year and every station which has an extinguisher should have a promise card in addition to the tag on the extinguisher to insure that recharging is done at regular intervals.

CULTIVATE YOUR NEIGHBORS

By A. G. Jackson, Oregon

One lesson of the Herman Creek (Oregon Forest) fire of 1922 that every district ranger, lookout man, patrolman, guard -, in fact, every member of the protective force can take home to himself - is the value of securing in advance the cooperation of settlers and visitors in or near his district.

The Herman Creek fire burned at least one day and spread over more than a thousand acres before any member of the Forest Service knew about it. Smoke conditions in the Columbia Gorge at the time explain why our lookouts failed to discover it, but the only reason that local residents did not report the fire to the Forest Service lies in the fact that no one had impressed on them how they might cooperate and thus help prevent forest fires. Every rancher and other resident or sojourner in a ranger district is a possible cooperator and should be approached on the forest fire question before the fire season opens, and "sold" the idea of protecting the forests by reporting to the rangers as soon as possible after discovery any forest fire or fire that threatens any forest land. If this had been done early last season, it is very probable that there would have been no Herman Creek fire costing more than $40,000 and which left a scar in the Columbia Gorge Park that years can not wholly obliterate.

It is quite possible that there were other fires in the Northwest that became large and destructive under conditions like those at Herman Creek. I believe it will pay well for all forest officers to cultivate their neighbors.

WASHINGTON NOTES

Reforestation in Indiana Becoming Popular: Reforestation in Indiana under the 1921 tax law exempting forest lands from all except $1 an acre taxes has become so popular that the forestry division of the State Conservation Department has engaged an assistant forester to attend to the work of classifying such lands. C. C. Deam is State Forester, and George Philips of Ann Arbor, Michigan, is the new Assistant Forester.

University of North Carolina Devoted News Letter to Forestry: The June 20 issue of the News Letter published by the University of North Carolina was entirely devoted to forestry articles, all of which were excellently written. The need for reforestation and fire prevention was stressed.

Tennessee Wants Forest Firewarden: State Forester R. S. Maddox, Nashville, Tennessee, has notified the Forest Service of an opening in his department for a chief or district forest firewarden. For this position he would like to secure a graduate forester of some experience in fire protection work. Information in regard to the position can be secured from Mr. Maddox, and applications should be sent direct.

ANOTHER PAT ON THE BACK FOR THE LABORATORY

National Association of Wood Turners, Inc.,
Box 517, South Bend, Ind.

July 2, 1923.

Col. William B. Greeley,
Chief Forester,
Washington, D. C.

Dear Col. Greeley:

At its annual convention in Chicago, the National Association of Wood Turners passed the following resolution in commendation of your work:

"Recognizing the constructive character of the work done by the Forest Products Laboratory on the problems of raw material for the wood turning industry, this Association desires to make public record of its appreciation, and directs that copies of this resolution be transmitted to the Chief Forester, and the Director of the Forest Products Laboratory."

Sincerely yours,

Wm. A. Babbitt,
For the National Association of
Wood Turners.

FOREST EXPERIMENT STATIONS

How Sap Rises: Various theories have been propounded from time to time as to what causes the sap to rise in trees. Now comes the Hindu physiologist with the news that it is due to the activity of living cells, and that under favorable circumstances sap will rise at the rate of a hundred feet per hour. The cells absorb the sap and then contract, forcing the water in each case upwards, the time interval between pulse beats among the plants studied being 14 seconds. The cells which carry on these activities are confined to the cortical sheath which extends around the tree throughout its entire length.

Like in animals, with increasing temperature there is an increase in the rate of pulsation, and a decrease in temperature is also followed by a decrease in the rate of pulsation. It has also been shown that a system similar to the nervous system of animals exists in plants, and that plants respond quickly to drugs and shocks. Professor Bose declares that there is no characteristic action in the highest animal that has not a counterpart in the simple life of the plant.--E.N.M.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Meeting on Manual Revision: During the week of June 25 we listened with pleasure and profit to the discussions between the stockmen's committee appointed at the Ogden meeting and the Forester and his assistants on the proposed Grazing Manual. The discussions continued for the greater part of three days and finally concluded with a general agreement between the stockmen and the Service on general policies through slight changes in the wording of certain regulations and instructions without departing from the fundamental principles. The issues which were presented most vigorously by the stockmen's committee and to which the Forester could not agree were:

1. Basis of grazing fees.
2. Recognition of grazing preferences as property rights.
3. The status of prior users without commensurate lands.
4. Cuts for distribution on preferences supported by dependent commensurate ranch property should not be made at any time to admit new applicants.

The committee came prepared to reiterate and emphasize the principles advocated by the stockmen at the Ogden conference and held pretty tenaciously to some of the principles that were presented there and on which agreement was not reached at that time. A number of stockmen from the range dropped in on the conference and a few took part.

Beginning the first day of the conference, the stockmen had the opportunity to hear a brief, straightforward talk by Secretary Wallace, in which he set forth his views on the general subject of National Forest grazing. He stated in substance that the stockmen did not own the National Forest range; that it was public property; that the use of the grazing resource was similar to a leasing privilege; that he was expected to handle it as any stockman or landholder would handle it himself, and that to establish grazing fees purely on the basis of the cost of administration would be inconsistent with his responsibility as head of the Department of Agriculture.

The Colorado Game & Fish Protective Association has concentrated on three Things: 1. The establishment of State game refuges; 2. a campaign of publicity and education through correspondence and the medium of its Bulletin; 3. the encouragement of the organization of local game and fish protective associations.

Mr. Hatton, Secretary of the organization, feels that commendable progress has been made in all these items during the short life of the association. The State now has 13 game refuges, the Association Bulletin is widely circulated throughout the State, and a large number of local game and fish protective associations are springing up. In the past couple of months, 6 of these local organizations, comprising a total membership of 450, have affiliated with the State organization.

Cloudburstsin Wyoming: The region of Cody, Wyoming, was visited on July 22 by severe cloudbursts which did considerable damage. The roads were impassable for several days and a number of bridges were washed out. All the buildings at the Canyon Creek Ranger Station were washed out with the exception of the house which it was feared for a time would go also.

Forest Service Men Visit La Salle University: On July 23 Assistant Forester Headley of the Washington office and Peter Keplinger of the District office made a visit to the La Salle Extension University in Chicago, on the invitation of Mr. Hugo Diemer, Director of Industrial Courses. The purpose of the visit was to confer with the university heads on methods in handling home study courses.

THE YOUNG SILVICULTURIST IN SPRINGTIME

With Crocus and with Daffodil
The city lawns are gay,
And unknown flowers of varied hues
The Easter hats display.

The fields are clad in tender green,
The leaf comes on the tree;
With top and ball on vacant lots
The children shout with glee.

The sap mounts fast in oak and pine,
The buds swell on the firs.
The Silviculturist's sluggish veins
No vernal impulse stirs.

THE YOUNG SILVICULTURIST IN SPRINGTIME (Concluded)

Afar he views the mountain tops
Still white with winter snow.
Beneath them in the sunny glades
The rosy Trilliums glow.

From sapling growth the dryad steps,
The naiads leave the streams,
In vistas dim of forest glens
Maid Marion's kirtle gleams.

From dusky bowers of hemlock green
The thrush is calling clear,
By mountain meadows strays the elk,
Beside the brooks, the deer.

And comes the joy of summer morns,
The grateful shade of noon,
In summer nights from cloudless skies,
Resplendent beams the moon.

The Silviculturist in his room
No woodland visions sees.
He reads reports and then he writes
About the growth of trees.

--G. F. A.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Arizona Lumber Once High Priced: Contributor to Safford, Arizona, newspaper tells of a time when common lumber in that region brought $100 per thousand and sawmill could not supply demand. The first sawmill, in the Graham Mountains within what is now the Crook National Forest, according to this writer, was built about 1880 by a man named Frye who had been a sailor. He contrived his sawmill to run a something like sails are handled on shipboard, with ropes and pulleys. His power was a pair of small mules attached to a sweep that turned a master wheel. The product found ready market at the mill even at ten cents a foot. The price was not regarded as excessive considering the laborious method by which the lumber was sawn.

Our First Auto Forest: The Sitgreaves can soon qualify as a true auto forest. A series of light duty roads (locally called truck trails) is placing almost every point on the forest within a few miles of automobile transportation. The Supervisor is considering the possibility of mounting some of the fire guards on motor cycles and it may not be many years before the Sitgreaves, like large cities, will see the passing of the horse as the means of bringing forth the fire apparatus. The motorcycle as a means of rapid transportation might mean a change in fireman instruction since firemen would not only have to be acquainted with the country but also with the road which would bring them nearest the fire. By working smoothly such a fire system ought to eliminate Class C fires.

Relic of Antiquity: In clearing out old files in the DO storeroom, a letter written under date of July 17, 1899, by the Director of the Oklahoma Agricultural Experiment Station to the Washington Office came to light. Its receipt was duly acknowledged, according to the rubber stamp impression, by the Division of Forestry and the information furnished. "This is no longer 'old files'", remarked one of the DO men, "it is an ancient document and is entitled to the respect tendered gray hairs."

Aeroplane Fishermen: They used to come in schooners, and then they came in cars, but now they come in aeroplanes like fishermen from Mars.

Local residents along the upper reaches of the Gila River, according to the Gila Forest Bulletin, were quite surprised recently to see three huge planes come settling to earth to unload fishing parties. What is the use of building fine trails to trout streams if people are going to ignore them and come gliding in by air?

DISTRICT 3 (Concluded)

Trespass Case to Highest Tribunal: A pasture permittee on a New Mexico forest against whom a trespass case has been pending for some time has written the Supervisor a letter in which he threatens to have the President of the United States send a man from Washington to investigate conditions in and around the forest, speedily remove from office the supervisor and Ranger (____________) and turn the forest back to the Secretary of the Interior. He concludes with: "What I have wrote has been written in the fear of God but not in the fear of any man. We propose to carry this case to the courts of Heaven where God himself will be the Judge and the differences between all men will be forever settled accorden to his Laws where every man shall appear to answer for the deeds done in the body. There I will met you face to face where all such Devels as I believe you are will be cast in the Lake that burns with fire and brimstone forever and ever."

It is hoped the Supervisor is in position either to effect an amicable settlement right away or to make his evidence hold out to the end.

Apache Values: It is estimated that the Apache National Forest and the adjoining Indian Reservation contain over 300 miles of trout waters and that these are about 90 per cent of the trout streams in Arizona. It is no wonder, therefore, that one hears in Springerville that the trout streams and the mountain scenery are, after all, the Apache's greatest potential asset. Good roads will undoubtedly make this the fisherman's paradise of the State and restocking of the streams will follow. Some of the residents of this section are already alive to its possibilities.

Receipts, 1923: The total net receipts for the District for the fiscal year 1923 amount to $645,281.09 as compared with $899,923.79 for 1922. Timber sales increased about $50,000 while Grazing lost $290,000. The other classes about held their own.

MORALE

Entrance I gained in a most inconspicuous way;
Leaving my name - and little else - within a niche
Like many others on a lengthening road, the which
Trod I, not knowing where it led, day after day.

A decade and a half I came and went with those
Who spent themselves, or great or small, upon the quest
To which each gave, bit upon bit, *his* or *her* best,
With steadfast zeal whereby all work ennobling grows.

And when, returning to the gate by which I came,
To take another path, I found in trust for me,
A share in that high enterprise now grown to be
Identified with many great in deed and fame.

My small deposits, by a steady interest grown,
Amounted to an asset for a common good;
By simply doing each day, as I understood,
A part in something worth while I had come to own.

How great becomes the small! How strength our weakness nerves,
When, in a great adventure, one takes *any* part!
So, though I win success in other field, my heart
Will glory in that cause *The Forest Service serves*!

--D. S. Edgerton, Clerk, Forest Service,
January, 1909 - July, 1923.

DISTRICT 4 -- INTERMOUNTAIN DISTRICT

No Smoking: The Coeur d'Alene Forest in several of its recent contracts has introduced a "no smoking" clause for employees of the contracting company. Since a good many lumber companies in the white pine region have of their own accord established "no smoking" rules in the woods during fire season, this might be a good plan for all large sales in the white pine type. Following is the contract clause adopted by the Coeur d'Alene:

During the period from June 15 to September 30 of each year smoking in the woods or at any point within the sale area boundary outside of regularly established camps, or the building of camp fires for any purpose whatsoever is prohibited; provided, that the Forest officer in charge may designate camp sites along streams, which shall be cleared of all inflammable material, where camp fires may be built to permit the heating of lunches and where smoking will be permitted at the option of the purchaser.

Be Brief: A District Office man went out on an inspection trip from Missoula early in the season and presently landed in the Salmon River country on the Nezperce. As frequently happens on the Salmon River, the mercury went up to the 110° mark, or thereabouts, and stayed there. The D.O. man, who is used to handling G.E.N.F., S & E.P., etc., and who has been fully instructed in regard to wordy wires, sought the nearest telegraph office and dispatched a fast day letter--collect--to his wife. The wording was: SOSBVDPDQ.

Why the Undersh--er, ahem,--Undergarment? We have all kinds of requests, but this is the latest.

A fellow came in and asked for a suit case large enough to hold 53 pieces of field equipment. I asked him what were the "pieces" and he said, "a deck of cards and an undershirt."--O.C.B.

DISTRICT 6 - NORTH PACIFIC DISTRICT

"Adam and Eve and the Devil": Supervisor Sylvester's allegory, "The Garden of Eden," won the cup trophy for Wenatchee as the best special stunt put on before the 38 Rotary clubs of Washington, Oregon, Idaho, and British Columbia at Tacoma last spring. The scene was laid in a western orchard district as typified by the Wenatchee Valley. The devil found the new Eden based upon culture of the same fruit with which he had successfully tempted Eve in former times. His scheme of revenge was frustrated by the spirit of Rotary.

Fuzz-Tails: During April some 600 head of horses were corralled by the ranchers of the John Day Valley in cooperation with Forest Service Officers Thompson and Elliott of the Malheur Forest. A record was kept of their brands, about 50 stallions were gelded and they were turned out on the range again. The ride was made to determine the ownership in order to collect grazing fees, taxes, etc. Since the ride about 100 head have been sold for $2 per head, the larger ones to be broken and sold and the smaller ones to be skinned and fed to hogs. And it looks now like a great many more would be taken off the range in the near future. The owners will get rid of them if they are made to pay taxes and xxx grazing fees on them, and we expect to make a big horse ride every spring until the range is free of fuzz-tails.--H.R.E.

Fire Prevention Song: Miss S. Leila Hoover, lookout on Pine Mountain, Deschutes Forest, has written the words and music for a fire prevention song which is called, "Forest Safety Song." Our D-6 musical critic has tried it out and pronounces it very good.

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IS P. R. WORK WORTH WHILE?
By Supervisor Agee, Cochetopa

Because of the intangible nature of publicity work and the difficulty, as compared with other lines of Service work, in measuring results from it, one often wonders if we are actually making progress and if P. R. work really pays.

Recently one of the D. & R. G. W. Ry. trains started a fire near Gray's Siding on the Cochetopa Forest. The fire was around the point of a hill from where the section crew was stationed and was not easily seen by them. The section foreman's eleven-year-old son noticed some smoke above the hill and called the crew's attention to it. They told him that it was from a train, but he was insistent that it was a forest fire. Finally, they turned out and went to the place in question where they found a fire just getting under way in a dense stand of lodgepole pine reproduction. Arriving when they did, they were able to hold it to an area of a few hundred square feet. I learned of the fire and the next day went to Gray's Siding to check up and see if the section crews were turning out promptly. The section crew accompanied me to the scene of this fire. The boy insisted on going along too, although his mother called to him to come back to the section house. He talked about fires and asked me questions all the way there.

A number of fallen trees, stumps, etc., were still smoldering on the area. We decided to bury them to eliminate further danger. It was early in the morning and it was difficult to detect the small smudges arising from some of them. The boy busied himself dodging here and there through the burned jack pine area pointing them out to us, and finally got a shovel and helped in covering them with earth. All in all, he was about as thorough a fire fighter as I have ever met outside of the Forest Service's immediate personnel.

The fire was in an extremely hazardous locality, and had it not been attended to promptly when it started there is little doubt but that considerable damage would have resulted, and there would have been several hundred dollars expense in controlling it. Upon inquiry of the boy as to where he had learned about forest fires, it developed that he happened to be in Salida last winter, and went to the moving picture show the evening that one of the fire fighting films was run. Some 800 people here saw this film. I do not know what impression it made on the others, but if the idea of fire protection was sold to none except this boy, the running of the film has proven well worth while.

THE LUMBERMAN IS ALSO A PART OF THE PUBLIC
By Theodore Shoemaker, District 1

Probably the best test of the merit of an article is the discussion and criticism it brings out. If that is true, Mr. Shepard in the Service Bulletin of May 21, as well as the editor of "The American Lumberman," whom I quoted in the Bulletin of April 30, must have said something worth while. The editorial in "The American Lumberman" has been variously quoted and commented on, and now comes Mr. Flint with a further discussion of points raised by Mr. Shepard, whose article seemed to me to be good enough to let stand except for the danger which lies in it of directing attention away from the main issue - namely, that the success of forestry depends on education.

The problem will doubtless be solved partly by prevention of man-caused fires, partly by changes in logging practice that will hinder fires spreading, partly by reforestation, aforestation, prevention of waste, taxation, better management of the woodlot, etc. Other things also enter in, but none of them will come except through the enlightened interest of the public. Admitting that bad lumbering is responsible for a great deal of our forest devastation, how are we to change bad lumbering to good lumbering except by education? To say that fires would not run if slash had not been left is no truer than to say that there would be little harm in the slash if some one did not set fire to it. To argue who is most to blame, the man who leaves the slash or the man who sets the fire, is like chasing the devil around the stump. Both are to blame, and it is not necessary for us to fix the degree of blame for each. There are a good many people, even some foresters, who believe that the solution as far as fire is concerned should be sought in more fire prevention and patrol rather than in slash disposal. There is some basis for such belief, especially when one contemplates the immense damage done under enforced burning. Obviously, the cost of logging is increased by the piling and burning of brush. It is argued that, in some places at least, this additional cost, or even a less amount if rightly used, might secure enough additional prevention and patrol to hold fire losses down quite as well as by burning brush. All of these things are, however, details to be worked out in each locality and for each forest type, and about which there is room for honest differences of opinion.

But whether we are to make lumbermen dispose of slash or whether we are to provide extra fire prevention measures with the slash unburned, it requires legislation, and it requires enough support by the public to make it possible to enforce the laws. I think that everyone in speaking of the public would include the lumberman. He may be only a minor part in this case, but he at least needs educating. Through education we should get him to see the error of his ways and get him to do as much as he will, voluntarily, to remedy conditions. The rest of what must be done by those who are cutting our forests will have to be enforced by laws growing out of the pressure of public opinion, a pressure that must come through education. Our disagreements as to where the trouble and the blame lie, and as to what is necessary to do and how to do it, largely come from a difference in the conditions with which we are individually familiar. It is well for foresters to discuss such things in detail, but it is a mistake to let it lead us from the main highway along which we must travel towards a solution of the forestry problem.

More of our time spent in securing public approval and support for forestry measures, making that the main issue, and less spent in fogging up the atmosphere and confusing the lay mind arguing whether it may be done this way or that way, is the great need among foresters. Every time we take a trip off on some by-way to a supposed cure-all we lengthen the time of our journey to the real remedy - public sentiment. For each by-way leads to a different point of view and to new disagreements about what is wrong and how it should be righted. Foresters are agreed on the main steps to be taken, involving, with other things, the reduction of hazards and greater care in the use of fire. We need to sell these main steps to the public more than we need to prove out all the details.

The lumberman is not more to blame for the ruin he is causing than the rest of the public is for allowing it. His motive is self interest. The same motive on the part of the rest of the public would stop the ruin. What is needed is an awakening to the fact that we must change our ways for the general good. In that awakening the lumberman is simply a part of the public, and, being a minor part, will conform to what the rest of the public demands.

IS THERE ANYTHING NEW UNDER THE SUN?

By John H. Hatton, D-2

My answer to the question asked in the heading of this article as it relates to the National Forests is yes and no! No, for the reason that the Forests have existed long enough now that a precedent has been established in previous observations or study on nearly every forest problem and phase of forest management (either abroad or in this country) as well as on a large majority of special cases. Yes, because many of our older problems require a new angle of observation or application, and further, because there are in reality many new things awaiting disclosure as our faculty of observation becomes keener through study and experience.

Whether or not our observations on the older phases of forest management have been conspicuous by their absence or correct, or wrong, or incomplete, or full, or action on them has not been consistently followed up, are questions that the administrative officer or inspector should answer as well as the officer himself. There seems to be a growing tendency, however, among all of us to ignore what has gone before and record as original observations many of the impressions which are observed in a brief, hurried trip from one point to another over the Forests. Original observations or discoveries, of course, are the incentives to work and progress, and for this reason alone it might not hurt us occasionally to be deceived into thinking we have made an original observation; even though some one years ago has discovered and recorded the same thing. But many times we overlook results or records which cry out of closed or transferred files and which perhaps have been produced through long, painstaking efforts of study and original observations or gathered in our regular work. Bulletins representing perhaps years of concerted effort are briefly perused or forgotten about and lie moulding on our shelves.

The offense seems to be greatest among those of us who look into the Forests from the outside and who, by our very position and opportunity for fuller knowledge, should be the least offenders. Thus we little realize our power to influence favorably or unfavorably those with whom we come in contact - our power to push forward or hold back the Service.

There is nothing to my mind which will work faster toward reducing morale and disintegrating our proverbial esprit de corps than just this sort of neglect. If a job has been imperfectly done or has been left undone, the officer responsible knows that and it won't hurt him to call his attention to it if done in the proper spirit. There will be a new incentive to make good on merited criticism. There will be new "pep" instilled. If he knows, however, within himself that he has done a better job than one making a brief hasty inspection can possibly do, and observations are recorded which are incomplete, or which do not recognize what progress had previously been made on the same subject, the result is demoralizing in the extreme.

I have perhaps painted an extreme situation to point out a seeming tendency and danger, which, however, may be amply illustrated if we take a few moments to think about it, either by a closer analysis of our own work or that of others. We need a prescription for this administrative ill which might easily grow into a disease fatal to the best progress of the Service. Perhaps it is an organization problem. My preliminary treatment would be: 1 - make fuller inquiry into previous work and records and current plans before dictating that fatal memorandum; 2 - Work out and practice closer correlation among different offices that have occasion to observe different phases of forestry, perhaps from different or special angles; and 3 - mention the other fellow's effort, if any, whether good or indifferent and comment accordingly. No one will object to fair criticism, whether favorable or adverse, if that criticism is really just.

WASHINGTON NOTES

Some Recent Arrivals and Departures: Messrs. Barnes, Carter, Eldredge, and Norcross have all found their way back to the haven (not heaven) of the Washington office after more or less extended field trips. Gill will return in a few days from a round of the Districts on Public Relations business. Zon took his departure last week for St. Paul, to make final arrangements in connection with the establishment of the new Great Lakes Experiment Station, of which he is the Director. Kittredge and Mitchell will leave soon for St. Paul.

Another Job for Sparhawk: Sparhawk has just been given the duties of editor of the Forestry Section of Botanical Abstracts. This journal contains brief abstracts of practically the whole field of botanical and related literature, both in English and in foreign languages.

New School of Forestry in the South: A Department of Forestry is just being organized at the Oklahoma Agricultural and Mechanical College, Stillwater, Oklahoma. The head of the department is Christian Jense, who has been attached to the College as Forester for several years.

Arthur T. Upson, in charge, Section of Industrial Investigations, Forest Products Laboratory, has been detailed by the Forest Service to the Personnel Classification Board in its work of classification of the field personnel outside the District of Columbia. In response to a request from the Board, Mr. Upson is to look after, particularly, the classification of the positions in the Service held by Engineers, Chemists, and Wood Technologists. He reached Washington on July 9.

New State Forest in Louisiana: The Forestry Advisory Board of Louisiana has authorized the purchase of the H. S. Burrowes tract of second growth timber situated near Forest Hill in Rapides Parish to be used as a State forest to demonstrate the practicability of reforestation. The tract was cut over 25 years ago and the best timber was used, leaving the small timber which reseeded the area,which is now fully stocked with young growth. The new State forest is located on the headwaters of Indian Creek on which the State fish hatcheries are located. The Jefferson and Pelican highways are near the new State forest.--Louisiana Conservation News.

OFFICE OF FOREST EXPERIMENT STATIONS

Forest Types of the Central Rocky Mountains

Why do some trees grow on the hot south aspects and others only on the cool north slopes? Some in shade, others only in the sun? Some in the creek bottom, and others on the rocky ridges?

Recent studies by C. G. Bates, at the Fremont Forest Experiment Station, published in the Journal of Agricultural Research of April 14, 1923, have sought to compare the differences existing in the six Rocky Mountain species studied in their relation to heat and especially to moisture. The density of the cell sap was used as an index of their characteristics.

At the beginning of tree growth in the spring, all the trees had sap of about the same consistency, but as the season advanced the sap became heavier in some species than in others and the differences after a period of growth expressthe ability of the species to utilize light. The first test made of sap concentrations placed the species in the following order, the heaviest being given first: Engelmann spruce, Douglas fir, lodgepole pine, bristle cone pine, yellow pine, limber pine. This is the position usually given the various species in general tolerance tables, and this order agreed perfectly with the water requirements of the species based upon the amount of dry matter produced for each unit of water the tree used.

In general, the species with the high sap density made the greatest growth, indicating greater capacity to utilize sunlight, and resulting in the lowering of the amount of water required. Water loss through the foliage is reduced because of the slower evaporation of the heavier solutions.

Carefully conducted tests to determine how dry the soil can become before wilting takes place were made of the four major species and show little or no difference between spruce, Douglas fir, and yellow pine. Lodgepole pine died first while the soil still had moisture enough for the others. This leads Mr. Bates to believe that any advantage spruce seedlings possess through greater sap density is compensated for in both fir and pine by the stouter plants and deeper rooting of the seedlings.

Mr. Bates concludes that the distribution of forest trees has been limited almost entirely by the temperature relations of the species which are intimately connected with their capacities to utilize sunlight. The tree of greatest capacity thus can not only outgrow its competitors where heat and light are limited, but with too high temperatures may suffer severely by the failure of its very dense sap to evaporate freely. Each species, apparently, has now adapted itself to the moisture conditions it commonly encounters in its own temperature zone through its rooting habits.

Thus, because of special adaptations, soil moisture, and particularly the rapidity with which it drys out, has considerable influence on the natural distribution of trees. In reforestation and management work we probably should give more attention to the moisture requirements of the species than we do.

One Thing After Another: After the Fort Valley Forest Experiment Station had pointed out the damage that sheep do to reproduction of the western yellow pine, came the porcupines, the mice, the rats and a few others to enjoy the dessert the sheep were leaving. On some of the Station's fenced plots, the rodents had practically destroyed all the trees up to six feet in height and had done damage in trees larger than this. Now the Biological Survey has been called to the rescue and the various beasts of the field are expected to move on. Experiment Station work is one thing after another.

Have a Heart: Extract from monthly report of Starke substation, Southern Experiment Station:

"Labor troubles, high water in the Lake, vandalism, and the Director's visit featured the month of July at Starke."

DISTRICT 1 - NORTHERN DISTRICT

Aid from Utilities Company: The following letter illustrates the value of enlisting outside interest in our forests. The Interstate Utilities Company is a local and long distance telephone company operating in northern Idaho and adjacent portions of Washington and Montana.

The Interstate Utilities Company

To All Employees:

Two weeks of intense heat and dry weather have brought the forest fire season to our territory.

Timber Protective Associations, the Government Forest Service, lumber companies and interested individuals are exercising watchfulness this year to a greater extent than ever before in history. They are determined to put the appalling fire loss of other years at a minimum this season. This is an undertaking in which the Telephone Company plays a large and important part.

The employees of this organization in all branches of the company's work are called upon during the coming months to lend their aid in the PREVENTION OF FOREST FIRES with all the effort and energy they have. The telephone system plays a big part in the preservation of life and property, and it must play its biggest part in the biggest problem that our community faces: Fire in the Forests.

Learn to-day the official to whom fires in the vicinity of YOUR exchange are to be reported. When reports of a fire come to you, do not stop until that official is advised. Fire calls are in the same class as reports of death, accident and distress. Handle them as such. In the prevention of forest fires this organization has a golden opportunity of rendering a great service to our local people and our nation.

Let's do it well.

JOHN F. DAVIES, General Manager.

Supervisor Shows Diplomatic Attainments: Supervisor Fitzwater of the Pend Oreille shows unmistakable evidence of a profound knowledge of diplomatic technique in his everyday dealings with the public. His most recent accomplishment in this line is a fire trespass case, - a fire caused by the carelessness of one Theofore Gieszelman, - in which the Government received payment for all damages, including the actual loss of timber plus the cost of suppression. The fire covered an area of 50 acres, destroying 20 M of yellow pine and 7 M of Douglas fir. The damage to the timber is estimated at $53.50, and the cost of suppression amounted to $65.45, making a total damage of $118.95, which was paid in full by Mr. Gieszelman. The settlement was made out of court in a sensible businesslike manner, which makes itself conspicuous by the absence of ill feeling.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Extension Workers' Conference: During the week beginning July 22, the Extension Workers throughout the State of Colorado, C. A. Lory, President of the Agricultural College, Roud McCann, Director of Extension, and his Assistant, Alvin Steinel, met in conference at the Epworth League Camp on Grand Mesa of the Battlement National Forest.

According to previous arrangement, the afternoon of July 25 was given over to the Forest Service. Brief talks were made by John McLaren, F. D. Mendenhall and H. N. Wheeler of the District office and Supervisor Ray Peck. These were followed by a field demonstration at a local sawmill in the woods by Supervisor Peck and Surveyor Wm. B. Fay. The 60 or 70 members of the conference took a keen interest not only in the talks but in the field demonstration and expressed themselges as having learned much of what the Forest Service stood for and the value of the Forests, particularly in watershed protection and in the economic returns to the local community.

Wild Life Conference: Sponsored by the Colorado Game & Fish Protective Association, the Colorado Mountain Club, the Outdoor League, the State Forestry Association, the Forest Service and other organizations, there will be held at Boulder, Colorado, August 20 to 23 a wild life conference. The program calls for 10 sessions, 21 speakers, 4 field trips, lectures, discussions, camp fires, luncheon for the delegates and a pageant. Flowers, birds, animals, fishes, trees, forests, parks and geology will be discussed by Government, State, Club and University officials. Dr. Oberholtzer, U. S. Biological Survey, will outline the general plan of the conference which promises to be one of the most interesting sessions that has ever been held in Colorado. There will be two or three speakers from the District office in attendance.

Unusual Rains in D-2: So far, forest fires have not been numerous or extensive this season in Colorado, Wyoming, or Dakota because of the fact that there has been an abundance of rain. It has rained almost every day since the beginning of July and still continues, and June was much damper than is usual in these States. There have been several electric storms but they have been accompanied by heavy downpours of rain and much hail. Forage for the livestock is abundant and with few fires the life of the Forest Ranger should be joyful even though he does get soaked to the skin every day.

Snowslide Occurs on Denuded Hill Slope: There may be some doubt as to all the things that will be proven as time goes on at the Experiment Station conducted in conjunction by the Forest Service and Weather Bureau at Wagon Wheel Gap, but the fact that observer P. F. Maxwell was killed by the snowslide on the denuded area is sufficient to prove that when the timber and other vegetation is removed from a mountain side, snowslides will occur. For unquestionably there would have been no slide in that locality had the timber and brush been allowed to remain.

Grazing Delinquents: On August 1, 1923, there was still $6,944.56 of the 1922 grazing fees delinquent. On the same date, the amount due from 1921 delinquents was $6,021.88. Eliminating cases dropped on account of financial inability of permittees to pay, there is still due from 1921 delinquents $3,728.20, or a total of $10,672.70. More than half of the 1921 delinquent fees are due from the Henry Jordan estate, which has not yet been settled.

DISTRICT 5 - CALIFORNIA DISTRICT

To Preserve Wild Life: It will be news to many that five large and active organizations are united in an effort to care for the remnants of the great herds of large game animals that formerly ranged over California, Oregon and Nevada. Funds for the work are being raised by the American Bison Society of New York, the Permanent Wild Life Protection Fund, California Fish and Game Commission, United States Forest Service and the California Academy of Sciences. M. Hall McAllister, who has set forth the purposes and plans of the interested organizations in the July OUR ANIMALS, says that the money will be handled by a regular committee of the Academy and will be expended for winter feed for the herds, salaries of game keepers, expenses of forming refuges, and general supervision and observation.

From 1860 to 1870, it is estimated, the herds of bison in the West numbered 5,000,000. By 1883 they were all gone except the few in Yellowstone Park and in Custer County, Montana. The hundred or more bison in the Yellowstone were not safe from poachers, and it was not long before the number was reduced to less than a score. The Academy and assisting organizations will seek to preserve the elk, antelope, bear and all of the other large game animals. It hopes to increase the numbers so that posterity may see the beautiful species which have been driven into remote fastnesses for safety.

Teaching Them Through Their Pocketbooks: It has been necessary, on the Cow Creek Unit of the Standard Lumber Company's sale area, Stanislaus National Forest, to make penalty scales for several seed trees which had been unnecessarily injured through the carelessness of the operators, especially in the case of bridge and landing construction. Upon finding that these penalty scales were necessitated because of carelessness, and that it was costing the company considerable money, the Assistant General Manager decided upon the following policy: the amount of the penalty scale was to be charged directly to the man who caused it.

Since this method of enforcing the contract has been in effect they have obtained excellent results. One hook tender on a spool donkey which was constructing chutes and landings had carelessly thrown a line around a sugar pine seed tree in such a manner that it was completely girdled. Upon the discovery that the cost of this tree would be charged to him, he decided to quit. Since that time the men in charge of donkeys are very much more careful about placing their guy lines, and have also placed more bushing on seed trees where lines are necessary.

Newspaper Builds Recreation Cabin: The Record Publishing Company of Stockton has constructed a 14 x 44 three-room cabin, costing $1100, at the Stockton Municipal Camp at Silver Lake on the Eldorado Forest. It is for the use of the Record's employees, as well as other guests at this popular playground.

DISTRICT 6 - NORTH PACIFIC DISTRICT

The Kind You Like To Get: The following came to District Forester Cecil from Mr. Robt. E. Smith, President of the Lumbermen's Trust Company of Portland. Mr. Smith had previously written a very complimentary endorsement of "Red Enemy."

"I wish to congratulate you again, but this time it is not upon the excellence of your moving picture production, but upon your organization. I am the owner of two quarter-sections of land in the Siskiyou Forest and took the liberty of writing your Grants Pass Supervisor for certain information. I am pleased to state that Mr. Haefner, the acting supervisor, gave me the information promptly and courteously by return mail, and the manner in which the whole transaction was handled indicated that the records of that office were comprehensive and accurate and that the administration of the office is extremely businesslike and efficient.

My contact with the office has been extremely pleasant and satisfactory and I therefore wish to convey my congratulations to you."

Them Days is Gone Forever: The following was found in the old L-Recreation files of the Fremont:

"Supervisor Fremont Reserve.

I wish to enter a protest against some of your Rangers and the facts are these I loaned my buckboard to two of my neighbors to go to Rosland with while there on the Knight of the 20 inst two of your rangers staid there and some one branded my Buckboard with U. S. no less than 57 times no part of it escaping it is litterly Branded all over if one or both of them did not do it they furnished the tools as no one else has that identical brand it also corresponds to a brand placed on my Bob sled by a Ranger last season further remarks upon such acts of vandilism is unnecessary at this time."

"Fire Weather": Dr. J. V. Hofmann of the Wind River Experiment Station has made arrangements with the Morning Oregonian radio service (Mr. Richard V. Haller) to send out humidity dope or warnings of "fire weather" in connection with the U. S. Weather Bureau notices. Several forest protection associations of Oregon, Washington, Idaho and Montana are planning to purchase humidity recording instruments in order to be able to foretell fire weather and also to be able to interpret Dr. Hofmann's warnings. He is trying to make arrangements to have the "fire weather" warnings radioed before 10 a. m. so as to be of practical help to forest officers, lumbermen, firewardens, and others.

Reaching the Camper: Supervisor Weigle of the Snoqualmie has secured the active cooperation of the Seattle Tourist Auto Camp. He has supplied them with about 50 lantern slides (fire prevention and camping scenes) which the Superintendent will run in sets of about 2 or 3 each week throughout the summer. The Superintendent and the Auto Club of western Washington asked for and were supplied with prints of three forest fire photos from which they will have large enlargements made to be framed and hung in the Community House at the Camp Grounds. The slides and framed pictures will reach thousands of campers throughout the summer.

DISTRICT 7 - EASTERN DISTRICT

Arkansas People Show Appreciation: To show their appreciation of the Forest Service and the interest that it is manifesting in the welfare of the settlers through the construction of roads, as well as in many other ways, the people of Mena, Acorn, Eagleton, and Black Fork celebrated on Saturday, August 4, with a big free barbacue the recent completion of the Forest Service road through the Arkansas National Forest between Mena, Arkansas, and Eagle Gap, a distance of 11 miles. Invitations to the barbacue were broadcasted through the State in a big poster which conspicuously stated that the celebration was prepared as a token of appreciation of the Forest Service.

In writing to Supervisor Plymale, the chairman of the barbacue committee asserts that "the road built by the Forest Service over which the local citizens travel so much to market is more highly appreciated than words can speak." As a means of developing favorable public sentiment there is nothing that quite equals a little stretch of good road.

Information Booklet Published: What is described by the Asheville Citizen as the first real compendium of information concerning the recreational possibilities of the Pisgah National Forest has recently been published by the Central Bank and Trust Company of Asheville, North Carolina, for free distribution. The publication is an unusually attractive little 8-page pocket folder written by Supervisor Verne Rhoades and answering in a highly interesting manner the questions "What does the Forest Service do to promote recreation?", "What may the public do in the Forest?", and "What are the chief restrictions upon recreational use?" In writing the material for this booklet and securing its publication in an edition of 2,500 copies at the expense of this Asheville banking institution, Rhoades has done a fine bit of P. R. work.

Kiwanians Have Camp on the Wichita: The Kiwanis Club at Lawton has recently established a camp within the Wichita and in lieu of its regular weekly luncheon the club recently arranged a picnic dinner at the camp and devoted the remainder of the day to the improvement of the camp site.

Boy Scouts on the Wichita: According to the newspapers of Lawton, Oklahoma, the boy scouts of Lawton and other adjacent cities are enjoying the best camp in their history at Camp Boulder, Wichita National Forest.

FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

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SOME MORE TIMBER SALE RECORDS BROKEN

By Harry Irion, Washington

As forecasted in the August 6 issue of the Service Bulletin, final figures show that a few additional sales records were established during the fiscal year 1923. The most notable showing was in the cut under commercial and cost sales, the aggregate amount exceeding that for 1920, the next highest year, by 185,851,000 board feet, or 23 per cent, while the contract value of the amount cut exceeded the previous record established in 1921 by $669,294, or slightly more than 35 per cent. It will be observed that the contract value of the cut during the fiscal year 1923 is only $75,903 less than the timber sale receipts for the same period, indicating a comparatively small amount deposited in advance of cutting at the present time. However, it is a much better showing than last year when receipts exceeded the value of the cut by only $5,390. The cut under commercial sales in Districts 5 and 6 amounted to a fraction more than 60 per cent of the total for all Districts, while the value of their cut was just a fraction less than 60 per cent of the total.

The amount sold during 1923 exceeded the previous sales record, established in 1913, by 151,274,000 board feet, but the contract value fell $473,192 short of that for 1922, the previous record year for value of timber sold, although the amount of stumpage sold during that year was 159,221,000 board feet less than in 1923. It is noteworthy that sales made by District 6 in 1923 amount to about 60 per cent of the total for all Districts.

The following table, which may be subject to slight corrections, gives the story in full for the fiscal year 1923:

District	Timber Cut		Timber Sold	
	Amount M board feet	Value	Amount M board feet	Value
1	114,427	$361,758	168,753	$712,311
2	90,478	242,682	160,313	463,381
3	81,440	181,452	50,964	134,032
4	31,279	62,871	132,036	301,371
5	271,274	869,285	284,427	700,679
6	316,279	655,177	1,371,101	3,377,754
7	35,437	121,491	48,319	180,675
8	31,171	53,052	52,087	79,259
Total Coml. Sales	971,785	$2,547,768	2,268,000	$5,949,462
Total Cost Sales	20,197	17,573	20,585	18,406
Total All Sales	991,982	$2,565,341	2,288,585	$5,967,868

SOME MORE TIMBER SALE RECORDS BROKEN (Concluded)

For the benefit of those who may wish to compare 1923 with other years, there is given below the amount and value of timber cut and sold during the ten preceding fiscal years:

Fiscal year	Timber Cut		Timber Sold	
	Amount M board feet	Value	Amount M board feet	Value
1913	495,668	$1,075,185	2,137,311	$4,465,959
1914	626,306	1,271,060	1,540,084	3,545,995
1915	565,754	1,179,448	1,093,589	2,667,705
1916	595,022	1,255,698	857,321	1,672,250
1917	727,416	1,506,909	2,006,547	3,705,942
1918	727,983	1,523,421	1,451,739	3,304,760
1919	704,769	1,512,374	798,900	1,828,889
1920	806,131	1,770,401	1,325,922	3,047,743
1921	800,452	1,896,047	1,143,108	3,162,030
1922	728,531	1,774,957	2,129,364	6,441,060
Totals	6,778,032	14,765,500	14,484,885	33,842,333
Average	677,803	1,476,550	1,448,489	3,384,233

FIRE EDUCATIONAL TRIP

By Rex King, Santa Fe

In the following statement are outlined the benefits derived from a fire educational trip made by Mr. George H. Cook of D-3 during the summer of 1922. The trip included the holding of public meetings at night - at which motion pictures and lantern slides were shown, supplemented by an address - and the visiting of farmers and ranch men during the day.

"I consider trips with a moving picture outfit to the outlying small native villages, such as made by Mr. Cook to Cuba, Regina and Coyote last year, as one of the most important and fertile fields of publicity now open to us. The direct effect of this trip can not be measured in decreased number of man-caused fires during that season and I believe an attempt to do so would be overlooking the real psychological effect of such things. The man-caused fires which result from small acts of carelessness, such as the dropping of a burning match or the absolute extinguishing of camp fires, are very difficult to reach. They are the result of acts of carelessness and not of criminal intent, that is, a man may be absolutely convinced of the danger of fire and may be resolved to use every precaution possible to prevent them, but at the same time may have been for years careless in the habit of throwing away matches. Therefore, propaganda directed toward convincing him of the danger of fires and appealing to his better judgment does not entirely reach the spot. We have to deal not with intent but with the forming of better habits in dealing with fires. Our present fire propaganda is directed, I believe, largely toward the former, so that a trip such as this requires time to soak in and set up its reaction toward habits.

"There is no question whatever in my mind as to the value of this trip in its effect upon general administration. It gave the impression that the Forest Service was not entirely on the basis of taking without giving. One person was overheard to remark that it is the first thing that the Government had ever done in that community directly for the people. It gave the people the idea that the Forest Service is interested directly in them in a more personal way than the enforcing of laws. I believe it set up a better feeling among the people and went further in permitting us to get in closer contact with them than anything that has been done along that line in years in that vicinity.

"Anything that we can do which begets better attitude in general things toward the Service is bound to have its reaction on the fire question; not only that, but we have the still larger obligation of bettering their general conditions in whatever way we can."

A PLEA IN ABATEMENT OF THE KID-GLOVE POLICY

By E. L. Perry, Santa Fe

Once upon a time I threatened to shut down a small sawmill because the operator had repeated a trivial offense about which I had warned him on a previous occasion. The discussion which followed was in the nature of a monologue, with me on the listening end, and the sawmill man wound up his diatribe with this observation:

"You've got me by the short hair, of course, and I've no doubt in the world you'll pull. I've got a good notion to sell out this outfit and put the money in stock. A grazing permittee can spend his whole life dodging the regulations and never have anything worse happen to him than maybe a bawling out."

I did not take him apart for the apparent heresy, because, in sooth, there is much more truth than poetry in the charge. Everyone who has given the matter thought must realize that what has always been sauce for the timber purchaser goose has not by any means been sauce also for the forage purchaser gander. We brandish an extremely efficacious club over the head of the timberman, and obtain discipline through the certain knowledge that it will descend promptly, albeit justly, to enforce those principles which we have found to be indispensable to the management of the forests. An equally efficient club is provided, and was no doubt intended to be used, upon the grazer, but it seems to have become so covered with venerable moss, softened by the damps of caution and entangled in the lush growth of red tape that it is now of little use save as an adornment to the pages of the grazing and trespass manuals.

Every field man - I specify field man because he has first-hand knowledge of both activities on the ground - knows that grazing administration lacks sadly that bang-up, toe-the-mark efficiency that characterizes timber sale management. This is justified in part by the fact that forest management is the "big top" of our avowed mission to cause 1.27 trees to grow where but one tree grew before, while grazing is a sort of side show to be given the benefit of whatever heavy thinking may be left over after all provisions have been made for growing the 1.27 trees aforesaid.

At any rate, we haven't the same degree of efficiency in grazing administration that we have in timber sale administration because we have not wanted it as badly. We have too much followed the line of least resistance; too much allowed the business to run itself. Grazing inspections have been more or less perfunctory and not at all comparable to those given timber sales. We have failed to equip our grazing regulations with the teeth necessary to enforce compliance, with the result that the conviction is pretty firmly established in the minds both of the Service personnel and the public that it is impossible to enforce them. The bugaboo of possible court action has caused the legal department to impose requirements in the collection of evidence that in all but exceptional cases are impossible of attainment. I should hate to have to estimate the number of evident trespasses that are each year given the effect of official condonance by securing the signature of the trespasser on an application form. And the minor infractions of the regulations by established permittees that are winked at year after year because nothing much can be done about it are as the sands of the sea. Moreover, the tendency in recent years seems to be to reduce the penalties for trespassing and to be more and more exacting as regards the sufficiency of evidence.

Reduction or revocation of permits and preferences is a powerful weapon, sufficient to enforce discipline on most forests, and has the advantage that its use is discretionary within the Service. But here again we confront a bugaboo, this time self made, in our mustn't-touch-it attitude toward established preferences. It is not a weapon to be used indiscriminately, of course, but every grazing forest has its list of chronically recalcitrant permittees who cause endless trouble themselves and set a bad example for others, and who should be cleaned out. Human nature being what it is, I can see no hope for proper administration so long as the restraining regulations may be ignored practically with impunity.

We seem always to work with the fear that the slightest change of policy or procedure may wreak some vague but devastating effect upon the livestock industry. Of course the livestock industry is even now teetering upon the brink of oblivion. It has been ever since I can remember, for the stockmen have told me so year after year. Nevertheless, it lives on in some miraculous fashion, and I am given to doubt that the change to a clean cut, businesslike,

A PLEA IN ABATEMENT OF THE KID-GLOVE POLICY (Concluded)

take-it-or-leave-it policy such as exists in our timber sale administration will push it over the edge. It has not pushed the sawmilling industry out of existence, and if there is any line of human endeavor more delicately balanced, more fraught with the possibility of acquiring red ink decorations on the balance sheet, it has yet to be discovered.

DO CATS HIBERNATE?

By John McLaren, D-2

Wading and shoveling through a season of cloudbursts in Colorado and Wyoming, we have sometimes had peaceful dreams that maybe our percentage of Class C's might be lower, maybe even our man-caused curve might descend toward the horizon a little instead of persistently pointing starward; all of which tended to give us the feeling that possibly some of the sharp pins might be sheathed or anyway blunted before the next allotment conference. But lo! here comes Flint in the July 16 issue of the Service Bulletin with a brand new pin and sticks it in a brand new place.

No, Schreck's article wasn't censored, it was a perfectly good article on a good subject and illustrates one reason why fire lines are rapidly being abandoned on the Michigan. Of course, Schreck figures that publicity on this subject will act as additional pressure on us to buy him some more trucks for his other ranger districts. The cat only looks like a kitten to us but we like him.

Well, anyway, I guess the "held line" cost figures got more serious consideration than otherwise. I was in the field when I read the article and soon as I got in I asked Miss E.E.K. to dig up the files to see what we had reported and how we got it that way. Sure enough, including the Michigan, the cost runs $1.37 per chain. We were a little tempted to pass up figuring the costs with the Michigan thrown out but plunged in and find that on the other 34 fires the cost runs $1.69 per chain, so we claim this is no "cat," not a big one.

Now the truth is told and we have a new hunch for material for the D-2 Bulletin. We've just finished a series on "Do Lions Scream?" and for the winter can go on "Do Cats Hibernate?"

WASHINGTON NOTES

Our Marksman Wins Another Distinction: R. Y. Reynolds has just been chosen by the Assistant Secretary of War to be the civilian member of the Ammunition Board, which tests, chooses, and decides the specifications of the ammunition used in national and international matches. This Board consists of an officer from each branch of the military service, with one representative of civilian riflemen. Reynolds ranks as one of the leading civilian riflemen of the country. He was captain of the national match rifle teams of the District of Columbia 1919-1921 (this team has the highest standing of any civilian team of its class); member of the International Smallbore team which defended the Lord Dewar trophy at Camp Perry, Ohio, in 1921, defeating England, Canada, and Australia; winner of the Manhattan Medal at Seagirt, N. J., in 1922; and elected a director of the National Rifle Association to serve from 1922 to 1925.

Worth Its Weight in Paper? Average timber prices for certain grades (logs) during the first half of July in various Prussian provinces:

	Marks per cubic meter
Oak - first quality	2,240,000 to 16,559,000
" second "	1,020,600 " 4,942,300
Beech - first quality	1,700,000
" second "	1,000,000
Pine	3,179,000
Spruce	694,000 to 2,630,000
Spruce pulpwood	351,000 " 745,600

Foresters' salaries were increased on July 1 to 360,000 marks a month for the lowest grade, and 2,260,000 marks for the highest, besides certain allowances for dependent families. Forest laborers' wages, effective July 15, range from 1,080 marks an hour for girls under 16 to 6,640 marks for able-bodied men over 24.--W.N.S.

"Honesty the Best Policy": It's a great thing to have even a local reputation for anything worth while, but when this same reputation spreads over the whole of the United States, there is a source of pleasure in knowing it. This is only a preamble to a pat on the back for the Service. On August 21 a post card addressed to "The Honesty Bureau, Washington, D. C.", reached the Atlantic Building from a school teacher in Maine. Now, there is not so much point in that the school teacher addressed the Forest Service in this way as there is in the fact that from a choice of a hundred or more bureaus in Washington the Post Office authorities delivered the card to the Forest Service. Another point of considerable interest to a few of us is that our own mail clerk was discriminating enough to send the card to the Office of Publication. Oowah!

FOREST PRODUCTS LABORATORY

More Sawdust Wood: Wood hard as oak and with all the qualities of genuine timber is reported as having been invented by a Norwegian scientist. It is made by using a mixture of 50 per cent sawdust with chalk and chemicals, and subjecting these to a very heavy pressure.

This is High-Priced Material: Bolts worth their weight in silver are being used in some tests now being made at the Laboratory. There are 1,200 bolts costing between $4,000 and $5,000; some of the bolts are worth $10 a piece. The high costs are because of the accurate machine work required in turning the bolts inside as well as outside. The bolts were furnished by the Navy Department and are used to determine the most efficient form for such bolts and to obtain data on the strength of bolted joints.

OFFICE OF FOREST EXPERIMENT STATIONS

Russian Forestry Student Visits Office: Mr. A. Koroloff, a Russian student at the Yale Forest School, visited the office last week in search of logging data. He was especially interested in the effects of logging on the silvicultural aspects of management, and he went over a number of unpublished manuscripts by members of the field force. Russia has little efficient logging equipment, and when economic and internal disturbances have been settled, Russia will doubtless adopt many American lumbering methods, Mr. Koroloff stated.

The Old Order Changeth: A new interest is being manifested in forest research by the lumber industry. Now comes the Great Southern Lumber Company of Bogalusa, La., with an offer of a tract of forest land to be used by the Southern Forest Experiment Station for turpentine experiments. It is not so many years ago that the industry did not believe in experimentation, but it is realizing that no industry can maintain itself without fundamental studies and research.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

More Road Logging in Colorado: H. D. Cochran, Assistant in the Office of Public Relations, is logging the roads on the National Forests of the Western Slope of Colorado. Plans are under way for the printing of these logs, and those previously made in the other Forests of the State, by the Rocky Mountain Motorists Inc. This organization is logging roads outside of the Forests and it is hoped that by another tourist season we will have a complete and attractive road log book covering all the main highways, both in the Forests and outside, in Colorado.

The San Isabel Forest is coming rapidly to the front as a recreation area. The people of that region are completely sold on the Forest and are advertising it in all possible forms. The Missouri Pacific and Santa Fe railroads have made special mention of it in their folders and booklets; commercial clubs and business houses are playing it up prominently in their literature and advertising. Even employees of the District office are spending their vacations in the San Isabel National Forest. Some of the other Forests in the District are being exploited along this line, but as yet, in no way compared to the extent which the San Isabel is being put before the public.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Forestry Association Visits Grand Canyon: Twelve members of the Massachusetts Forestry Association visited the Grand Canyon on August 11. This was a part of the annual tour that is made by members of that association. The original party this year consisted of twenty-nine, but the party was divided and the rest are making a special trip to Alaska. Supervisor Kimball of the Tusayan met the members of the party at the Canyon and had the pleasure of talking with them for about an hour on general forest conditions in the Southwest. The eastern men, according to Mr. Kimball, are very much interested in our problems and plans.

District Gets New Lawyer: Wendell Rawlins, who for two years or more has been in the office of the Solicitor of the Department of Agriculture in Washington, has been assigned to the position of Assistant to the Solicitor in District 3. Mr. Rawlins has arrived in Albuquerque and will relieve Mr. McNaught as soon as he has had time to become familiar with the work of the office. Mr. McNaught is being transferred back to Washington and will likely take up duties in the same section of the Solicitor's office, that of Game and Fiscal matters, to which he was assigned before he came to the Southwest.

Wants Children to Learn about Trees: Mother regrets lack of that knowledge in her own youth. A letter has just been received from a lady who with her children is camping in a New Mexico National Forest. Request is made for literature descriptive of the mountain trees and how the Forest Service cares for and preserves them. "I am anxious," says the mother, "that my children should know what I had no opportunity to learn."

DISTRICT 4 - INTERMOUNTAIN DISTRICT

New Trail Tool: Ranger I. M. Varner of the Boise Forest has recently invented a trail tool that looks good to several officers who have inspected it. He starts with a light reversible plow (Syracuse No. 36), and on the underside of the beam ahead of the tip of the plowshare he fastens a casting to which is welded an iron pin, long enough to come flush with the bottom of the plowshare. On this pin is pivoted a scraper iron which can be fastened in various positions, from almost a right angle from the plow beam to a point parallel with it. An iron rod fastened to the outer extremity of the scraper iron and drilled with a number of holes is provided for the purpose of regulating the scraper. A pin of the right size to fit these holes is set at the base of the plow handles holding this rod in place. In practice, a few furrows are plowed without the scraper attachment being in any way involved. Then the scraper is set to about the proper angle for doing the work and the loose dirt from the plowing is scraped off. After the trail has been swamped and cleared, two men have made as much as a mile and a quarter in a day with this outfit, using one horse to pull the plow. The outfit is very adaptable and can be turned and twisted in conformity to the needs of the work very readily, as the plow is very light and the scraper attachment itself does not weigh over one hundred pounds.

Worth Knowing: An editorial in the Salt Lake Tribune carries information that is worth knowing. It is sometimes necessary to use water from streams that are possibly polluted and may contain disease germs. Boiling and cooling the water is a long process. A much simpler and yet an effective way devised by the United States army is to add one or two drops of the regular 7 per cent tincture of iodine to a quart of water, stir well and let stand from 20 to 30 minutes. The amount of iodine is too small to be tasted, and yet it is effective in killing the really dangerous disease germs.

DISTRICT 5 - CALIFORNIA DISTRICT

Timber Sale - Plumas: On August 2 District Forester Redington awarded a sale of 121,000 M feet B.M. of yellow pine, sugar pine, white fir, red fir, Douglas fir and incense cedar timber to the Nibley-Stoddard Lumber Company of Cromberg. This timber is located near the line of the Western Pacific. The conditions of sale provide that cutting shall be completed by December 31, 1950. At the rates bid the total value of the timber to be cut amounts to $376,000. Twenty-five per cent of this amount will be returned to the counties covered by the Plumas for school and road purposes, and an additional 10 per cent will be expended by the Forest Service for their benefit. Cutting will be conducted in accordance with the best forestry practice, which requires the leaving of all thrifty young timber to reproduce the forest and furnish a basis for a second cut. Timber will be closely utilized; all dead timber and all unmerchantable diseased trees will be cut to improve the condition of the forest and adequate fire precautionary measures will be required of the operator. The receipts for the last fiscal year for timber cut from the National Forests of California amounted to $920,000. Of this amount, cutting on the Plumas contributed about $143,000. District 5 now leads all others by a wide margin in timber sale receipts. This is direct evidence of the depletion of the forest areas in southeastern United States and the general trend of the lumber industry toward the Pacific Coast.

Oakland Has the Right Idea: The Oakland Municipal Recreation Camp on the Stanislaus has proven so popular that the city is now applying for a permit for a second camp on the Plumas Forest near Quincy. The camp now in operation has been crowded all summer, and some weeks as many as 150 people have been refused admission because of lack of room. Oakland expects to operate the Plumas camp next year, and probably a third camp on some other Forest by 1925.

DISTRICT 6 - NORTH PACIFIC DISTRICT

P. O. Cedar: Two logging outfits are starting operations in the vicinity of McGribble R. S. (Siskiyou Forest) with more to follow, and it begins to look as if the Forest Service will have a monopoly on most of the Port Orford cedar left standing in this locality. The big price offered at the dock for cedar seems to be irresistible to the private owners. This will henceforth increase the fire hazard in the cedar belt, as where the cedar is gone most of them consider the fir hardly worth saving.

Getting the Other Fellow to Help: The Crater has recently supplied two of its resort permittees, to use on their stationery, a rubber stamp reading, "Prevent Forest Fires--It Pays." They also supplied these with a supply of the D-6 windshield stickers. The Crater is also planning to put on an exhibit at the Jackson County Fair this fall.

DISTRICT 7 - EASTERN DISTRICT

The Water Department of Lynchburg, Virginia, has issued an interesting statement concerning the city watershed within the Natural Bridge National Forest and the amount and quality of the water obtained from it.

Some of the land embraced within the watershed was originally owned by the city, but was acquired by the United States under the Weeks law in 1918. Since that time, and up to about two years ago, additional lands have been acquired by the Federal Government, with city cooperation on the Pedlar River Drainage from which the water is derived. Complete protection has been given the purchased lands since their purchase, but acquisitions have practically ceased because the city refuses further cooperation in buying the cultivated lands.

The benefits of this protection are revealed in the report made by the City Manager, in which it is stated that the water used during June, 1923, exceeded that of June, 1922, by 9,000,000 gallons. The use of alum during June, 1923, was nearly a ton less than during June, 1922. The use of soda in June, 1923, was 507 pounds, whereas in June, a year ago, more than two tons were needed. The turbidity of the water in June was 10, as compared to 25 in June, 1922.

The report also makes reference to the fact that the stage of the water did not drop below the spillway during June of this year, notwithstanding excessive dryness, which condition was doubtless a factor in the reduction of the turbidity of the water during June of this year. The report goes on to say, "It follows therefrom that the growth of trees on lands of the watershed which formerly were under cultivation has progressed to such a stage when leaf cover provides protection against rapid and excessive evaporation of ground water storage."

DISTRICT 7 (Concluded)

While protection has accomplished a great deal for the city, full benefits and an entirely satisfactory supply of water for the city can not be had until the entire watershed is protected from erosion and pollution.

The Pedlar River drainage contains 21,257 acres. Of this only 8,238 acres are in Government ownership and therefore being protected. The remainder of the lands, or 13,019 acres, is now privately owned. Of this, 3,629 acres are in cultivation, 1,801 acres are in grazing, while the remainder, or 7,589 acres, are in forest and restocking. Much of the land in cultivation lies on the upper half of the drainage, from which large quantities of silt are being washed down and deposited at the head of the reservoir. This condition has given concern to some of the city authorities and they are being impressed with the necessity of renewing cooperation with the Federal Government in order to acquire the lands from which the silt is being carried off.--R.Dieffenbach.

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THE NEW RELIGION

The forester's life is one of ease!
A timber famine he foresees;
He tries to warn the he's and she's
Who will not listen to his pleas.
Then he gets down upon his knees
And plants the seed to grow the trees;
Their life he fondly oversees
And talks about their pedigrees.
The people learn by slow degrees,
By ones, and twos, and even threes.
Then they, too, hold some jubilees
And follow up with planting-bees.
'Tis only then the famine flees.
Why don't YOU plant some little trees?

--F. L. DuMond.

Service Bulletin
U. S. FOREST SERVICE
(Contents Confidential)

Vol. VII, No. 36. Washington, D. C. September 10, 1923.

NO CAN DO
By Will C. Barnes, Washington

A rather interesting grazing decision was reached by the Supreme Court of the State of Idaho under date of May 29, 1923. The decision was based upon an appeal from the District Court of Gooding County, Idaho, to the Supreme Court of the State in the case of J. W. Fall, who sued J. E. Arkoosh for failure to carry out contract entered into covering the sale of a band of sheep with a guarantee that the grazing preference would follow the sale.

On or about April 26, 1919, the appellant sold to the respondent 1640 head of sheep for $25,000. To induce the purchaser to complete the deal at the price mentioned, the seller guaranteed that he was the owner of a right to graze and pasture 1750 head of sheep on the Sawtooth National Forest, and that said right was "appurtenant to the ownership of the sheep aforesaid." The seller of the sheep agreed that if the purchaser would pay the price asked for the sheep, which included the value of $3 per head for the grazing preference, the transfer of permit would be made. For some reason or other not made clear in the legal report, the purchaser of the sheep failed to secure a grazing permit and therefore sued the original owner for the sum of $4,920, based upon the $3 per head paid as a bonus.

In deciding the case, the Supreme Court quotes the regulations of the Secretary of Agriculture concerning the prohibition against "the sale or transfer of grazing preferences for a valuable consideration." The Court states that the regulations of the Secretary of Agriculture governing the grazing of stock on the National Forests have the full force and effect of law. Both parties to the deal were assumed to have full knowledge of the prohibition and therefore the contract entered into between them was in violation of law. Inasmuch as neither of the parties came into the court with clean hands, the Supreme Court refused to sustain the appeal and directed the District Court to dismiss the action. The following quotation is given from the Court's decision; 215 Pacific Reporter, p. 978.

"The contract, being clearly in violation of the regulations governing national forests, no action could be maintained for its enforcement, and respondent, being in pari delicto with appellant, under the rule generally followed by the courts, could not maintain an action for money paid pursuant to such an agreement. The law leaves such parties where it finds them."

All three of the judges concurred in the findings.

CHEMISTRY vs. H_2O
By Roy Headley, Washington

We now have instances cited where so-called chemical fire extinguishers have saved a combination residence and experiment station office, a boat, a deputy supervisor's residence, the Washington office, city residences, and barns - all of which is fine but slightly off the point. No ranger stations are reported saved as yet, and that was the specific question as in the Bulletin of July 16. There are obvious differences between ranger station buildings and offices, boats, etc., when it comes to figuring the cost and results of a fire extinguisher program.

CHEMISTRY vs. H_2O (Concluded)

It is now time to ask just what it was that extinguished these fires, since some of the testimonials for fire extinguishers do not make it clear that the authors are certain on that point. Apparently in a majority of cases, the extinguisher used was one in which sulphuric acid and soda are employed to expel the water from the tank - which incidentally is finished in a highly decorative and somewhat costly manner. If they think you will stand for it, clever salesmen will lead you to believe that water so expelled has more effect on a fire than plain water from the river used in the same way, but the chemical authorities say that this is bunk.

Suppose we want to provide special protection for a building, and that we are choosing between a sulphuric acid and soda extinguisher and a bucket or keg to be used in conjunction with a simple hand pump. The bucket and pump will cost probably 25 per cent as much as the polished chemical tank. Do you get any more protection from the chemical extinguisher than from the bucket and pump? No one has endeavored to show that this is the case, and I venture to assert that you get more from the bucket and pump than from the extinguisher because if you do not get your fire with the first charge, it is easier, quicker and surer to refill the bucket than it is to recharge the tank. What, then, do you get for the remaining 75 per cent of the cost of the extinguisher? Neater appearance, usually, when the apparatus is hung on the wall and a gratification of the impulse to do as clever advertisers tell you to do. Great is clever advertising. Even greater is the art of distinguishing between facts and sales talk in advertisements. If chemical extinguisher advertisers admitted that 75 per cent of the cost of their product is chargeable to the superior looks of their apparatus, their sales and profits would be reduced.

Boat and enclosed oil fires are a different matter. In combating those fires, the gas formed by heating the Pyrene liquid has a legitimate place, although on fires above the floor level or in the open, it is worth no more than the same quantity of water. Probably the frothy mixtures also have a special value in certain kinds of fires. They are depended on for oil tank farm fires by certain companies.

The following letter from Mr. C. S. Cowan of the British Columbia Forest Branch gives an interesting statement on the value of the Pyrene pump tank used on a strictly water basis. Mr. Cowan's letter follows:

"I was reading the June issue of your Service Bulletin and was very much interested in your article "Hope Springs Eternal." To some extent we suffer from the same kind of bug in this country and every once in so often one of our men comes through with a suggestion for some chemical method of doing away with Forest fires, but mostly forest fire fighting.

"The part that particularly interests me, however, is the 5 gal. Pyrene pump tank. We have been trying these out for some two years and our men find that they are absolutely invaluable. We have modified a pack board which fits this 5 gal. tank so that the pump stands up without being taken off the board. This tank is used when a fire line is constructed, for putting out smoulders, for, as you know, the most wasteful method of using water is from a bucket. The pack sack type of extinguisher we have given up, as we find it is impossible for the men to keep dry backs with these, and the result is that they are soon discarded, or ditched.

"The pump tank, however, puts the water exactly where it is needed. When the main crew has been taken off a fire line a number of Patrolmen equipped with these tanks can do an extraordinary amount of useful work. It is also valuable when a fire is some distance from water to use them in conjunction with an engine driven pump which may in some cases save a climb of 200 feet or more on a sidehill on a hot day.

"Our light patrol cars now carry one of these tanks filled with water and many an incipient fire by the roadside has fallen a victim to the work of these pumps. Our men using railway speeders also carry them and a number are kept on hand for fire fighting purposes. We use water, of course, only. Chemicals have never appealed to us from the demonstrations we have seen so far.

"I am just writing this in case you try out this scheme, as our men are very enthusiastic about it since these tanks were brought in two years ago, and they consider it a great money saver in fire and on patrol."

"BUMMER LAMBS"

By Fred R. Johnson, D-2

Among sheepmen the above term is applied to lambs which have lost their mothers, to weak lambs which are not strong enough to stand the drive onto the summer ranges, or to one of a pair of twin lambs for which a ewe may not have enough milk. Such lambs are ordinarily killed or given away, or sometimes left along the way to be picked up by the first coyote that happens along.

About 50,000 sheep are annually counted in at the Corral Ranger Station at the northwest corner of the Hayden Forest en route to the summer ranges on the Hayden and Routt Forests. Each year a considerable number of "bummer lambs" are killed or deserted at the counting corrals at this station.

When the sheep came in this summer, Mrs. Riggs, wife of the Ranger who counts in the sheep, decided that she might as well have the "bummer lambs" as anyone, so she gathered them in along the driveway for several miles and at the counting pens. When the sheep had passed on she had 80 lambs to her credit. The family cow provided sufficient milk for the weakest lambs, and most of them were soon weaned and grazing like old-timers. They were a motley looking bunch - some of them as big as the huskiest lamb in the average band on the range, others just able to navigate; some of them with the marks of the finest blooded Shropshires, others looking like the poorest scrubs of a Mexican outfit.

Gathering the lambs, caring for them, keeping them out of a neighbor's alfalfa and oats field, represented quite a lot of work during the period of two to four weeks that the lambs were kept. However, the reward was worth while, for Mrs. Riggs sold her lambs to the neighbor rancher for a sum equal to her husband's monthly pay check. This again illustrates that the wide-awake energetic person - applicable as well to Rangers' wives located fifty miles from the railroad - can oftentimes earn enough money to purchase that long desired set of furs or the trip to Denver or Frisco.

HISTORIC REGION ON THE MODOC

By W. S. Brown, Modoc

Deputy Supervisor Brown, Grazing Examiner Smith and Ranger Ivan A. Cuff recently spent three days in the Modoc lava beds in connection with the location of roads, etc., and while there briefly explored some of the points of interest in that section of the Forest.

This is a country little known even to natives of Modoc County, but for natural wonders it can hardly be rivaled anywhere in the West. One cave recently explored by a resident of Klamath Falls measured approximately two miles in its main passage, and on account of the numerous other passages is named "The Labyrinth." Other caves visited by local Forest officers are "Skull Cave," in which are found skulls and bones of animals now extinct in that section, and whose roof is approximately 100 feet high; "Sentinel Cave," 1,800 feet in length, with obelisklike rocks standing in the passage-way; "Symbol Cave," decorated with Indian hieroglyphics; "Crystal Cave," whose roof is covered with scintillating crystals, and "Indian Wells," where there is an abundant supply of water. Other points of interest are the "Devil's Mushbowl," "Devil's Fireplace," "The Chimneys," "Mammoth Crater," and natural bridges. Most of these wonders are easily accessible by automobile.

Not the least interesting place is Captain Jack's stronghold, scene of the Modoc War. Hundreds of white men lost their lives on this battleground during the war with the Modoc Indians in 1873. With the exception of a plain wooden cross, the lettering on which is almost obliterated by age, marking the spot where General Canby was murdered and scalped, there are no monuments or markings of any kind here. As a result of the Forest officers' visit, however, a movement is being started by several Modoc County organizations to build a fitting monument to commemorate the battleground and its different points of interest. Due to the receding of the waters of Tule Lake, it will be but a short time before Captain Jack's stronghold will be accessible by auto, although it is now necessary to walk six miles over the lava beds to reach it.

The lava bed region is easily reached by auto from Klamath Falls, 45 miles away, or Alturas, 75 miles from its approximate geographic center, or from the northeastern part of the Shasta Forest. Colonel William Thompson, famous Modoc war veteran, and hale and hearty in spite of his years, has cordially invited members of the Forest Service to accompany him on a visit to the famous battleground in the near future, with a view to marking the different historic spots where he and his fellow officers and men fought so valiantly half a century ago.

WASHINGTON NOTES

Pines to be Grown on Georgia Farms: A farm program for Georgia recently put out by J. Phil Campbell, State Director of Agricultural Extension, is intended to meet the new needs created by the ravages of the boll weevil, shortage of labor, and lack of experience in producing and marketing general crops. The third place in the program, which contains a total of seven points, advocates timber growing on the farm by the farmers reseeding large areas of their poorer lands to pines. This is without question the result in part of recent efforts in that State by the Forest Service in farm forestry extension.--W.R.M.

Governor Pinchot Signs Rothrock Memorial Bill: Governor Pinchot recently signed a bill authorizing him to appoint a commission of five Senators to be known as the "Joseph T. Rothrock Memorial Commission." The Commission is authorized to secure a bowlder from State forest land and locate the same in an appropriate spot in the borough of McVeytown, Mifflin County, as a memorial to commemorate the service in forestry interests of the State of Dr. J. T. Rothrock, an early pioneer in Pennsylvania forestry. The sum of $1,500, or as much thereof as may be necessary, is appropriated to the Commission.

Carter, Shepard, and Gill have just returned to the Washington office from the Western Districts. Mr. Carter, who has been absent from Washington for four months, returned direct from Alaska.

Captain Eldredge left for the Lake States to-day for inspection of timber sales on the Superior. He then goes to the Bighorn, Madison Forest, and Missoula.

FOREST PRODUCTS LABORATORY

Laboratory Serves Large Forest Service Timber Sale Purchaser: Information on western hemlock concerning its uses, preservative possibilities and other properties with special reference to the employment of this species for ties, piling, and poles was recently furnished Hutton, McNear, and Dougherty, the successful bidders for a block of National Forest timber in Alaska.

Many Interested in Glue: The interest of people in glue, as well as the distribution of a laboratory news note, is illustrated by the number of letters received after a news item on an improved casein glue had been published. During the two weeks following the mailing of the news note to a selected list of newspapers, requests for information concerning the glue were received from 167 companies and individuals.

New Book Published by Laboratory Man: "Wood Distillation," by Dr. L. F. Hawley of the Laboratory, has just made its appearance. This publication fills a great need since prior to its appearance no authoritative up-to-date work was available upon this subject. The subject is treated in two parts, the first dealing with the distillation of hardwood, while the second relates to distillation of resinous wood. The book should be of extreme value to the industry, since all modern methods of plant practice are clearly described.

Florida Man Discovers New Tanning Agent: Quebrachio, tanbark oak, chestnut, and hemlock, as sources of tannin, may undergo forest devastation without a regret by the tanner, if the glowing claims of a Florida discoverer of a new tanning agent may be given credence.

The new material is made from the needles of the Australian pine, and, as the author says, he "trims the trees and thus does not kill the goose that lays the golden eggs." He says that trees set out six years ago at Miami now form a perfect forest and leave trunks as big around as a man's body. "Going to show the great possibilities, if a forest of these trees were grown out on the Great Everglades; it would require but a few years (no longer than the required time for an orange grove to yield fruit) when these trees would be yielding needles and give the tanning world a perpetual supply of tannin material."

FOREST EXPERIMENT STATIONS

The Husky Infant: In the Rangers' Funny Book, as the Service Directory is often called, tucked safely away under that all-embracing and high-sounding name of Research, is a little subdivision known as Forest Experiment Stations or, until lately, Forest Investigations. We say little because we are still small and some day expect to become a mighty giant. We are already giving our fruits freely to Forest Management, furnishing shade to our many grateful Public Relations, enriching the Lands with our litter, furnishing browse for Grazing, supplying Operation with shoots for its yardstick and fuel for its fires, besides producing bridge material for Engineering, and furnishing the field its necessary pulpwood used in telling the Forester why their Accounts are overdrawn.

We have grown up from a little seed, planted, nurtured, and protected in our early life and icy stares of an unfriendly field by a temperate Zon. When we were planted he called us Silvics; when we germinated we were called Silvical Investigations; in our early youth we became Forest Investigations. Now, approaching the fruitful stage, we are called Forest Experiment Stations.

In spite of being a youngster, we are well known, and, like a youngster, we are everywhere and into everything. In the Atlantic Building you will find us in the Library, in Forest Measurements, and in Compilation. We have units in the South, in the Northeast, the Appalachians, the Lake States, and, though perhaps not quite as strong in the West as yet, still you find our roots spreading and ramifying everywhere in each of the Districts.

Should you want to find us in the field, we are gathering Seed, working in the Nursery, or even Planting trees by your side. We are on your timber sales watching your Brush Disposal, studying your Methods of Cutting, looking for that Natural Reproduction you have tried to get. We are in your second growth stands making Thinnings and determining Yields. We are scarring your pines for Naval Stores, and Measuring the growth of your stands. You find us by your side on the Fire line, following the damage by Weather, studying Erosion and Influences. We are watching the Animals, the Diseases, the Insects that infest your forests, and making Tree studies of the various species in your Types. Yea, verily, we are everywhere, and we shall later tell you how you can recognize our tracks if you don't see us personally.

Cooperation: A cooperative agreement has been prepared which continues the cooperation between the Office of Forest Pathology of the Bureau of Plant Industry and the Office of Forest Experiment Stations in California. For some time it has been impossible to maintain the Feather River Forest Experiment Station on the Plumas Forest, and rather than have the property stand idle the Station has been loaned to Forest Pathology until the Service is in a position to operate the Station. Forest Pathology is carrying on a number of investigations in forest tree diseases from this Station, the work being under the direction of Dr. E. P. Meinecke.

DISTRICT 1 - NORTHERN DISTRICT

The Reviewing Officer Says "Check"!: The following excerpt is taken from an 858 found on the desk of the Property Custodian:

"During the season, the powder man who worked on the Yaak road absent-mindedly left four of the above cap crimpers on stumps he was blowing out. After the blast went off he was unable in any of the cases to find them. The fifth time he left a crimper he dashed back to rescue it, and just as he reached the stump the blast went off, blowing the powder man up. When he came down no trace could be found of the five badges he had attached to his belt, nor could the two pair of auto goggles and the safety strap that he was wearing be found. At the time he went to rescue the cap crimper it was not exactly known how much property he had on his person, but after a check of the property of the Yaak district was made, it was determined that in addition to the above mentioned articles he must have had four carrying cases, two nippers, four mattock picks, one jack plane, three protractors, 91 knapsacks, seven saddles, pack, and two railway speeders. A thorough search of the surrounding country was made, but none of this equipment could be found, in fact only the left shoe and necktie of the powder man was found."

DISTRICT 1 (Concluded)

Kaniksu Rangers on the Dot: Rangers, guards and lookouts on the Kaniksu Forest are now setting their watches by signals of standard time sent out by wireless telegraph from the San Francisco Naval Radio Station at noon each day. The time signal is received by the radio station installed at the Priest River Experiment Station in connection with fire studies. The correct time is supplied as the field officers phone in for it. Thus all the time pieces of the organization are synchronized and questions as to the time of detection and elapsed time are readily settled. An interesting occurrence recently reported with regard to correct time is that in which a judge's decision favorable to the Forest Service in a fire case depended partly on whether the time of the defendant or the forest officer was correct.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Sheep Ranges Understocked: During the recent inspection of the sheep range on the San Juan Forest, it was outstanding that the ranges were understocked. This was particularly noticeable since throughout the District as a whole there was a very heavy demand for sheep range last spring. Two causes may be cited for the failure to fill the San Juan sheep ranges. In the first place, the fencing up of winter ranges, as a result of the 640-acre homestead act, has forced reductions in the numbers even to the extent of some sheepmen going out of business. Secondly, the heavy selling of ewe lambs during the period of depression of the sheep industry is now being felt and will probably be more keenly felt the next year or two. During this depression, the sheepmen departed from their usual plan to keep the original number of sheep up by retaining ewe lambs. Lambs of all kinds were sold closely during the depression because of the bad condition of the wool market and also of the market for old, broken-mouthed ewes.

Mr. Austin Hawes, State Forester of Connecticut, has been a recent visitor in the District, spending some time at Estes Park and later taking in a number of timber sales in the lodgepole pine type on the Colorado and Medicine Bow Forests. This is Mr. Hawes' first visit to this region for a number of years. He spent considerable time in northern New Mexico in the early days of the Forest Service.

DISTRICT 3 - SOUTHWESTERN DISTRICT

When Cattle Went in Hospital Cars: General rains throughout the southwest are restoring a smile to the faces of cattlemen, according to reports of conditions in all the forest bulletins. The pleasant curve is not yet entirely without a break, however, because some of the old-timers recall previous drouth disasters and their far-reaching effects. Just now the Gila tells a story related by J. B. Gilchrist, who bought into the GOS Cattle Company in April, 1904, when no rain had fallen since the previous August. The company made a contract sale to a man in California, who, upon seeing the condition of the cattle, refused to buy f.o.b. New Mexico, but agreed to take all cattle that were alive two days after reaching destination. The GOS Company ran a hospital car for the weak stuff and by nursing them through succeeded in delivering alive after two days with the exception of four head. The Gila is determined, when there is temptation to overstock again as the range improves, to remember the hospital cars of 1904.

Mexican Forest Service Under Way: It has a forest inspector for the State of Sonora, ten forest service employees and a planting plan. Senor Roberto A. Morales, Forest Inspector, recently visited Tucson, Arizona, and told a newspaper of that city some things regarding the aroused forest sentiment in his country. Education in the necessity for preservation of forests is being carried on among school children. The Mexican Forest Service is greatly interested in cooperating with our own Service in forest protection along the border.

DISTRICT 5 - CALIFORNIA DISTRICT

Human Carelessness Exacts Heavy Forest Fire Toll: Over 70 per cent of the 610 fires that have occurred up to August 20 this year in the National Forests of California were man-caused. These fires burned over 72,000 acres of Government land, and 34,000 acres of private property within and adjacent to the Federal forests. Out of a total of 124 fires in the Angeles, Santa Barbara and Cleveland National Forests of Southern California, all but six were due to human carelessness, largely that of smokers, campers and sportsmen. Fires on the Santa Barbara National Forest, set by the carelessness of campers and by incendiaries, have burned over 60,000 acres of chaparral and timber covered mountain slopes which were of inestimable value for watershed protection purposes. Seventy-four convictions for carelessness with fire in the woods have been secured by the Forest Service to date, the fines ranging from $50 to $500, with jail sentences in some of the more flagrant cases.

No, It Didn't Just Happen: To keep our friends in D-3 (see Service Bulletin for August 6) and elsewhere from becoming too chesty over the manner in which their publicity and fire dope appeals to and is used by advertisers, it may not be amiss to state that the four-column layout entitled "Uncle Sam Opens National Forests for Tourists," which has been running of late in the newspapers, was prepared by the Western Auto Supply Company of San Francisco in cooperation with the Office of PR, and broadcasted to their agencies throughout the West. Yes, the advertisers use our publicity all right, but in most cases you'll find that some Forest officer has had his finger in the pie.

Packing Lumber: The first thing to learn about packing lumber is to get it properly balanced - next learn to cuss a mule, then get some mules, saddle them up, put on lots of blankets and pads to keep lumber from rubbing them. Put your coat over the mule's head, tie sleeves under neck, put lumber in place, tie both ends and don't forget to leave room for mule to get his head down under the north end of the lumber when he is going south. Turn mule loose. He won't hurt anything; fact is, he won't move until you punch him with a stick. When you get about four of them packed start up trail nine miles to destination. First rock bluff you come to ends of lumber will strike on rocks and knock mule off of the trail. If you have as much patience as the mule, all will go well until you get to the first switch back (they are never built to pack lumber around), where you will find the cuss words come in handy. If the mule understands what you cuss him about he will stop, stick his head under the side of the lumber and try to crawl under it, to follow the trail, of course. The lumber follows the mule when he turns. If the mule does not understand what you say and you get excited, so will the mule, and you will have to cut down all the brush and trees within 100 feet of the switchback to get the mules and lumber untangled. About the fourth day you will understand the mule so that you can cuss just at the proper moment and the mule will stop with a jerk and miss some of the rocks and trees along the trail. We have not learned that much yet.--Shasta.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Exchange: A land exchange has just been concluded between the Stoddard Lumber Company and the Forest Service. Under this exchange, the company has deeded title to 2,750 acres of cut-over lands in Baker and Grant counties, Oregon, inside the Whitman National Forest, and has received in exchange a timber-cutting right on 720 acres of land lying near the Whitman Forest.

The lands received by the Government are largely in a cut-over condition, bearing a good stand of young trees, and are reported to be suitable for timber-growing purposes. The company receives a cutting right for the removal of an equal value in timber which is to be removed under the supervision of forest officers in accordance with forestry methods. This exchange is one of many now in process of negotiation between local officers of the Forest Service and various private owners inside the National Forests.--C.J.B.

Personnel Changes: Forest Examiner E. J. Hanzlik, who has been studying forestry in Sweden for the past year under the Scandinavian-American Foundation Scholarship, returned to duty on July 1. Deputy Supervisor C. F. Ericson of the Olympic, has been transferred to the office of Forest Management, effective July 1.

DISTRICT 6 (Concluded)

Interesting Visitor: An interesting and distinguished visitor in the office of Forest Management recently was L. MacIntosh Ellis, Director of Forestry Dominion of New Zealand, who is making a tour of western United States and Canada. He is particularly interested in Management plans and the regulations of sustained yield. He spent some time in looking over our Management plans, reports, and visited one of the large Douglas fir sales on the Snoqualmie National Forest.

Mr. Ellis seemed very familiar with American forest conditions and is evidently a thorough reader of the Journal of Forestry and American Forestry. He congratulated us on the ease of securing reproduction in this region; and he felt that our greatest handicap to really intensive forestry was the exceeding cheapness of stumpage. In New Zealand, he is planting annually several thousand acres, and is using to a considerable extent western American conifers, which have advantages over the native woods.--T.T.M.

DISTRIBUTION OF 1923 RECEIPTS

By G. H. Lautz, Washington

The following is a tabulation showing the amounts made available to the States and to the Forest Service due to the receipts for the F. Y. 1923. The amounts shown under the column "25 per cent of receipts" are being made available to the Governors of the various States for expenditure upon roads and for schools.

The ten per cent fund is available to the Forest Service for expenditures within the States shown thereon for the construction of roads and trails within the National Forest.

State	25% Fund	10% Fund
Alabama	$ 214.90	$ 85.96
Alaska	15,778.37	6,311.35
Arizona	105,827.98	42,331.19
Arkansas	9,517.16	3,806.86
California	318,339.67	127,335.87
Colorado	116,241.44	46,496.58
Florida	4,560.84	1,824.33
Georgia	1,765.19	706.08
Idaho	148,705.88	59,482.35
Maine	506.25	202.50
Michigan	123.58	49.43
Minnesota	2,688.29	1,075.32
Montana	75,598.46	30,239.38
Nebraska	4,329.98	1,731.99
Nevada	28,329.81	11,331.92
New Hampshire	6,353.48	2,541.39
New Mexico	44,736.87	17,894.75
North Carolina	8,410.03	3,364.01
Oklahoma	1,635.68	654.27
Oregon	168,111.95	67,244.78
South Carolina	176.19	70.48
South Dakota	24,799.15	9,919.66
Tennessee	3,237.65	1,295.06
Utah	67,650.16	27,060.06
Virginia	6,257.46	2,502.99
Washington	86,243.87	34,497.55
West Virginia	520.42	208.17
Wyoming	70,761.95	28,304.78
Total	$1,321,422.66	$528,569.06

Service Bulletin

U. S. FOREST SERVICE

(Contents Confidential)

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TREES AND RELIGION

By J. S. Illick,
Pennsylvania Department of Forests and Waters

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Tree worship is probably one of the very earliest forms of divine rituals. Sacred trees appeared in the most ancient mythologies and lingered in the last remnants of heathenism. No one knows exactly how tree worship started, but it was a common practice among primitive races who believed that anything that shows signs of life most possess a soul or spirit. A thing so stately and so inspiring as a tree, which lives so much longer and gets so much bigger than man, could not but win the adoration of early mankind.

The Bible from the beginning to the end is dotted with references to trees. From the third chapter of Genesis to the last chapter of Revelation the tree is used as a medium conveying great spiritual truths to humanity.

In Biblical times the Caananites planted a sacred tree beside each altar, and the Israelites, adopting their custom, set up sanctuaries under the shade of groves. At Schecham, Joshua took a great stone and set it up under an oak. It was also under an oak that the angel of the Lord came, sat, and spoke to Gideon. The Prophetess Deborah dwelt under a palm tree. It is believed that Solomon planted some wonderful trees in his temple. When David inquired of the Lord how and when he should attack the Philistines he was told to "come upon them over against the mulberry tree." Isaiah draws a more vivid picture when he says, "He heweth down cedars and taketh the cypress and oak which he strengtheneth for himself among the trees of the forest and he planteth an ash, and the rain doth nourish it."

At one time in the world's history it was the belief that two trees were the progenitors of the human race. The Eddas had it that after the creation of heaven and earth, Odin and his brothers while walking by the sea came upon two trees and changed them into human beings, the one a male and the other a female. The name, Ash, was given to the male (having come from the ash tree), and the name Embla was bestowed on the female (having come from an elm.)

We may be inclined to relegate tree worship to the dim and shady past, but history tells us that spiritual reverence of trees has a wider footing to-day than would seem possible. If one were standing in certain parts of Arabia at this moment he would see tribesmen worshipping under the heglik tree. Traveling on the Congo Coast one could not touch certain sacred trees in peril of life. In Guinea there appears a holy tree before each village. In Bengal the people regard the Sal tree as a national protector. The old peasant in Austria begs the pardon of trees when he fells them, for he believes that trees suffer pain. Philippine Islanders believe that the soul of their ancestors are in certain trees, which they therefore spare. The peasants of South Slavonia and Bulgaria believe that tree spirits may be forced to do their duty, for by threatening a barren fruit tree with an ax three times on Christmas eve it will, through fear of death, bear bountifully the next season.

No farther away from us than the Bohemians the first apple borne on a tree is sometimes plucked and eaten by a mother of many children. This gives assurance of productivity for the trees.

To this day the maidens of Silecia place an apple - a tree product - under their pillows on New Year's Eve and expect to see their future husbands in a dream at midnight. Whether they do this or not probably depends upon the tranquillity or perversity of their digestion; but even her American and English sisters lapse occasionally into a romantic tree superstition which has come down from the barbaric past.

These beliefs are not confined only to ancient times and foreign lands, but are found among us. Among the many tree superstitions of Pennsylvania are the following:

Trees that do not bear well should be shaken or whipped on Good Friday.

Drive nails in trees that do not bear well.

Hang pieces of iron on trees that do not bear well.

An apple tree will bear well if a dead lamb is hung on its branches.

When planting a tree tramp the ground in the direction of the sun, that is, east to west.

Wood from a tree struck by lightning must never be burned in a house for fear of fire.

If trees blossom in the dark of the moon, they will never bear fruit.

A sprig of Mountain Ash is placed on the lapel of the coat or on the dress of young folks to keep away evil spirits. This custom was widely used in northern Pennsylvania by parents when their sons and daughters left home on a long journey or a stay at school. It was their belief that the Mountain Ash sprigs would keep away evil spirits and ward off evil hands.

A sprig of Mountain Ash was tied to the tails of cows to keep away the evil spirit and thus prevent them from giving bloody milk, meeting an untimely death,or other misfortunes.

Indeed, we may not go away from home to find examples of tree superstition and beliefs. They come to us from the ancient past. Let us ask ourselves why we decorate our homes with holly and mistletoe at Christmas time. This is a festive custom originated by our barbarous ancestors, who believed that the holly and mistletoe brought into the house the spirit which inhabited them and kept them bright and green on this day.

Men's attitude towards the woods has changed. In medieval times the woods were the abode of evil spirits. They filled the medieval mind with fear. To Dante it was a dreadful thing to be lost in the wild woods. He pictured forest gloom where owls peeped out of every hole, bats fly about blindly, wild cats lay in ambush at every turn, and snakes wiggle among the roots.

To the modern mind the woods is the wonderful handiwork of a beneficent God. Emerson says "in the woods a man casts off his years as the snake his slough, and at what period so ever in life is always a child. In the woods is perpetual youth." Robert Louis Stevenson delights in lying among the trees and being afield. He sees the beautiful in trees, admires their make-up, enjoys their shade and shelter, and feels their warmth and affection.

The modern child may be fearful of mighty trees. This is nothing other than proof that the thoughts of the child are akin to those of the childhood of the race.

Tom Hood wrote so well when he said:

"I remember, I remember
The fir tree dark and high;
I used to think their slender tops
Were close against the sky."

In tree worship we find nothing but beauty and idealism. There occurs nothing repulsive or revolting in it. As we look upon the grace, symmetry, nobility, and grandeur of stately trees, it is not hard for us to imagine the circumstances and conditions under which we ourselves might worship them.

LUMBER COMPANY PASSES RESOLUTION

By E. E. Carter, Washington

The following resolution was passed by the Board of Directors of the Spanish Peak Lumber Company, a timber sale purchaser in the Plumas National Forest. The company owns several thousand acres of land within the Forest, on which future production must be assured if operation at the present rate of cutting is to be made permanent. The resolution indicates an appreciation on the part of this commercial company of the soundness of the management plan policy of the Forest Service and its benefit to operators who are in a position to take advantage of the opportunity for permanency of their business.

"WHEREAS, The United States Forest Service is working upon a plan to insure a permanent and perpetual supply of timber in the so-called "Meadow Valley Working Circle" of the Plumas National Forest by promoting the growth of new timber to replace the timber cut, it being estimated that in the time necessary for cutting the entire area of said Working Circle such new timber in the area first cut over will become of merchantable size, and

"WHEREAS, the cooperation of the owners and holders of privately owned timber in said Working Circle is necessary for the successful operation of said plan,

"NOW, THEREFORE, Be it resolved that this corporation do and it does hereby endorse said plan, and be it further resolved that in accordance therewith, the logging operations of this corporation on its own lands be hereafter conducted in such manner as will preserve as far as possible the growth of young timber thereon, and that a sufficient number of trees be left standing thereon to supply seed for reforestation of the cut-over areas, and

"BE IT FURTHER RESOLVED, That the President of this corporation be, and he is hereby authorized and empowered in behalf of this corporation to enter into such agreement or understanding with the United States or its representatives as may be deemed advisable for the successful working out of the said government plans for reforestation of said area."

ERUPTION OF MT. LASSEN AS SEEN BY MAGEE PEAK LOOKOUT

At 7.00 p. m., August 21, a small black cloud could be seen issuing from the main crater on Lassen Peak; this in a few minutes changed to a far larger cloud of white smoke mixed with steam. Minute by minute this increased in volume till at 7.45 p. m. the whole length of the crater was belching forth a huge mass of smoke, ashes and steam. This eruption differed from the preceding ones materially; in the past eruptions a huge column would ascend thousands of feet into the air. But the old peak is apparently losing its strength; in this case the smoke rolled out only ascending a few feet into the air, then falling, enveloped the mountain top, drifting along the Lassen Range past Broke-of over Turner Mt. away to and across the Sacramento Valley. It could readily be traced for fifty miles or more to the southwest. This appeared strange, as a strong southwest wind was blowing on Magee at an estimated strength of at least thirty miles per hour.

As the smoke and steam drifted past the Lassen range it presented a great and wonderful sight, a sight constantly changing, resembling for the most part an angry sea breaking against cliffs - at other times reminding one of a mad surf after a gale, the top of the mountain range appearing above greatly adding to its grandeur and beauty.

At 9.00 p. m., by looking toward the bright and nearly full moon, scuds of smoke could be seen racing at tremendous speed toward the North. These scuds increased in volume till at 9.49 a black mass was seen approaching from the South, and then began a picture long to be remembered. The mass of smoke rolled toward me ever thicker and thicker, and the bright moon rays piercing through it presented a panorama of great beauty. The forest, studded with its brush fields, usually dark and somber in color, became changed; from dark and forbidding it became light, its foliage a verdant green, then green tinged with silver, then a sea-bathed plain, one where the mountain tops alone could be seen; those tops loomed up silvery white, tinged with a shade of green shimmering, quivering, ever changing, presenting a picture of rare beauty - one that can scarcely ever be forgotten.

At 9.50 the dark mass mentioned previously swept over the scene and blotted out all; no longer could moon, mountain and picture be seen; instead an impenetrable screen of smoke and fumes - fumes that were unescapable, that left an atrocious taste in one's mouth, a taste that might have been expected in the old days before the 18th amendment took the joy out of life.

How long this eruption lasted I can only surmise; it is sure, however, that at 9.50 it was still continuing with unabated fury, but after that time nothing could be seen. The next morning the peak showed no signs of life; no trace was left excepting lava ashes that partially covered the ground at this station.--T. D. Goodman.

ONE IN A THOUSAND

By L. A. Barrett, D-5

The W. H. King June 11 homestead at Pulga in the Feather River Canyon is an excellent example of what can be done with a small tract of land by a man who is not afraid of hard work.

This homestead embraces 61 acres, mostly with slopes of 10 to 60 per cent. Originally it was all covered with brush and scattered timber. Water for irrigation and domestic use is plentiful.

King has been here 19 years and is raising and educating a family of 6 children. His "ranche" is as near self-supporting as I ever saw, regardless of size. He has his own irrigation system and an electric light plant, small sawmill, etc., operated by water power. He runs some cattle on the Forest range, has his own ice manufacturing plant, refrigerator, etc., and kills and sells his cattle.

He has 10 acres under intensive cultivation to lettuce, tomatoes, strawberries, etc., and under his own brand sells garden produce from Oroville to Reno along the Western Pacific Railway. King milks about 15 cows, makes ice cream, and sometimes sells as high as 50 quarts per day to passengers on the through trains that stop for water at Pulga. The steeper slopes on the homestead are being set out to walnuts as the brush is cleared.

In addition to the above, King even saws out his own box shook for use in shipping vegetables and berries, and since all the above is not enough to keep one family busy, manages to run a hotel and resort, store and post office as a side issue.

King had no better land than hundreds of other June 11 homesteaders who "blew up" and drifted on. But he has initiative and is not afraid of hard work.

WASHINGTON NOTES

Management's Loss - Research's Gain: With the recent transfer of Mr. J. A. Mitchell and Miss Mary Norton from the Branch of Forest Management to the Lake States Forest Experiment Station, the Washington office loses two competent and efficient members, whose faithful services and unfailing loyalty and interest have ranked them high in the esteem of all. While we are sorry to see them go, we congratulate the Experiment Station upon securing two such well-equipped workers for its force.

Forest Fires in Pennsylvania: About 3,000 forest fires occurred in Pennsylvania during the spring of 1923. Investigators were able to fix responsibility for the starting of many of these fires. The Department sent out a total of 1,272 bills covering the cost of extinction. More than $17,000 has already been collected. In many instances legal action has been taken against persons and corporations responsible for the fires.

WASHINGTON NOTES (Concluded)

Radio in Canada: An interesting and successful demonstration of the capabilities of the wireless telephone used in conjunction with the aeroplane for forest protection was recently given by the Air Board to a number of lumbermen and foresters at the wireless station near Ottawa. An aeroplane equipped with a transmitter flew over the city and adjacent country, and the observer continued during the flight to describe where he was and what he could see, and every word was plainly audible to his hearers on the ground. Two types of receiving apparatus were used: one was capable of sending messages, the other was a field machine set up in a tent with a temporary aerial.

It has been proposed, in conjunction with the aerial forest patrol, to equip the machines and principal ranger stations with radio-telephones of this kind which would very greatly facilitate the reporting of forest fires observed by the aeroplane. The receiver sets supplied to the rangers would be adjusted to a specified wave length and would be sealed so that they could not be put out of adjustment. It is quite feasible to send messages by wireless telephone for distances up to 50 miles; indeed, they have been sent from a distance over 150 miles. With this equipment the ground force would not be able to talk to the observer in the aeroplane, but arrangements are made for a system of signals from the ground which would let the pilot of the aeroplane know when the ranger was ready to receive a message, whether he had received it, whether he wanted it repeated, or whether he wanted the aeroplane to land. The use of the radio-telephone very materially increases the value of the aeroplane patrol, as it will enable the observer to report immediately to the nearest ranger the exact location, size, and other necessary information in regard to forest fires so that he may extinguish them before they assume serious proportions. It is proposed, also, in connection with this system to have a sending station at the principal headquarters of the forest-protective organization by which orders can be sent to all the rangers at stated hours.--Canadian Forestry News-letter.

FOREST EXPERIMENT STATIONS

What Did It? A peculiar condition is reported by the Wind River Forest Experiment Station on the Columbia National Forest. A strip of timber about 3½ miles long and ½ mile wide has been injured by some mysterious agent. The needles are killed on a part of the trees varying from the top to within 5 to 50 feet from the ground, although the twigs are usually not killed. The injury to some trees apparently occurred before growth started, while on others the growth of this season was one to two inches long at the time the trees were injured. This may be due to variations in the time that growth began in different trees and species.

On June 15, 1923, a very severe thunderstorm occurred at Red Mountain and the telephone line to the lookout tower was completely burned up for a distance of about ½ mile. Where the ground wire was completely burned the huckleberry bushes and the needles of the young growth of western white pine and noble fir were browned for a width of about two feet, but the twigs were n not killed. These needles have the same appearance as those in the large belt of timber injured on the opposite side of the mountain. Whether or not the injury to the belt of timber is due to an electric phenomenon is difficult to ascertain. The damage might readily be attributed to winter injury, especially since winter injury occurred quite extensively on the Oregon, Whitman and other National Forests. Detailed examination, however, emphasizes the peculiarities of this particular belt of timber. It lies in a straight compass course 25° west of north and varies more than 1,000 feet in elevation. Contours are crossed and recrossed by the strip of injured timber and it lies along slopes above or below pockets. Frozen ground, snow depth, winds or other climatic factors in combination may cause such injury, but the location would appear to rule these factors out, as would also the growth of the season. The behavior of the forest later in the season may be a guide to more definite conclusions. Hofmann and Simson spent some time on this area and also visited the winter injured area on the Oregon Forest, accompanied by Dr. J. S. Boyce, Forest Pathologist.

DISTRICT 1 - NORTHERN DISTRICT

The Montana Mountaineers, a Missoula organization, have just returned from a fifteen-day outing in the vicinity of Glacier Creek and the head of the Swan River on the Mission Range in the Flathead National Forest. A permanent camp was made at Lagoon Lake, to which supplies and equipment were successfully packed by horses. The entire time was spent in exploring a region entirely without trails, and whose topographic features were unmapped and unnamed except for the small section covered last year by the Northern Pacific party cooperating with the Forest Service.

Roughly, the area covered extends from McDonald Peak southward to the north fork of the Jocko. The country was mapped by triangulation and most of the peaks and lakes, as well as the largest glaciers, were named. The center of the region is a high peak, which was scaled by the Mountaineers on August 30. A monument was erected and the peak was christened "Mountaineer Peak." From this point fifteen lakes are visible and a dozen or more glaciers. In the ascent of McDonald Peak, which was made from the southeast from Lake of the Clouds in the record time of two hours and fifteen minutes, the party encountered three large grizzly bears, which evidently have been living throughout the summer in the vast slides below the peak. When encountered they were busy digging into the slide rock, acres of which have been worked over during the season. It was finally ascertained that they are getting their food from the lady bugs which are found in handfuls among the rocks. The fact that the bears were sleek and shiny indicates that lady bugs make good food, at least for bears. It is estimated that the largest one weighed eight hundred pounds or more. Mountain goats were sighted at various times, the largest band containing six. They are apparently not increasing very fast, as only three kids were seen altogether. An interesting half hour was spent in photographing a bunch of ptarmigan, which became so tame that they would run after pebbles flicked to them like chickens after grain. Whistling marmots and conies were numerous. Not an animal was killed, the only hunting being with cameras.

Twenty people made the trip. There was considerable rain, and the only shelter at the fly camps was such as could be constructed out of brush; but no one had so much as a cold on the entire trip. Undoubtedly, this is the most wildly beautiful country to be found anywhere, and the members are giving a good deal of thought to its development. About two hundred photographs were made which, with the maps, constitute an interesting fund of information concerning a country hitherto little known.

Through the influence of those who took this trip hundreds of people have become keenly interested in the out-of-doors and in this section of the Flathead National Forest.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Automobile Battery Attachment for Balopticon: An attachment made by Bausch & Lomb of Rochester, N. Y., makes it possible to use an automobile or radio battery in giving lantern slide lectures, where the ordinary balopticon globe is not usable. This has one 6-volt automobile Mazda globe. The results are very satisfactory, since the light is much stronger than the prestolite and relieves the lecturer of the necessity of carrying a prestolite tank. The cost is $10.50 for the globe condenser and the wire attachment. It has not been tried out in daylight in actual lecture work, but a temporary try-out in the office indicates that this attachment can be used for giving a lecture in the day time, provided the room is darkened as much as possible. It is not possible to use the prestolite arrangement in the day time, no matter how carefully the room is darkened.

Mr. MacLean, who is working on timber preservation at the Forest Products Laboratory and who has been doing considerable work at the Union Pacific Ry. tie plant at Laramie, Wyo., was a recent caller at the District office. It seems that by using high temperature and pressure, good, if not better, results can be secured than by the steaming methods now being used, and a great saving in time for treatment as well as in expense will be effected. While at Laramie he made some special tests of ties containing defects of various kinds. These ties were given the high temperature treatment under pressure, and studies will be made to determine whether this sort of treatment results in killing the fungi responsible for the defects. This should show pretty clearly whether

DISTRICT 2 (Concluded)

the railroad company will be warranted in a more liberal inspection policy as regards acceptance of at least certain classes of defective ties.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Makes the Lesson Stick: Ranger White of the Lincoln, according to the Lincoln Bulletin, never overlooks an opportunity in matters of fire publicity. On completion of a fire law enforcement case he hands the violator a number of fire signs to post and subsequent checks show they are always posted.

Cork Bark for Chinking: Ranger Haynes of the Apache saves the bark from cork bark fir logs cut for building log lookout cabins. Strips of this are placed on both sides of the small split pieces of wood used to fill the spaces between logs. This makes a tight fit without using mud chinking. As the wooden pieces dry and shrink they are driven farther in between the logs so that the wall again becomes solid and tight. Log walls made in this fashion not only are as good as those chinked with mud on "gunny sacks" but also are of much neater appearance. It's well worth trying in the Alpine type.

Interforest Boundary Changes: Advance copies of new proclamations for the Tonto, Prescott and Coconino have been received. They will transfer 124,500 acres above the rim from the Tonto to the Coconino and 279,000 acres on the Cave Creek District from the Prescott to the Tonto. It is expected that President Coolidge will sign the proclamations at an early date.

Eagles Predatory on Prescott: According to the Prescott Bulletin, eagles are doing damage to game and livestock on that Forest. Jim Reaves, a cattleman on the Cherry Ranger District, reports having seen an eagle catch a young antelope. The eagle carried his prey up about thirty feet and dropped it, then picked it up again and flew away with it. It is said that in Copper Canyon eagles have carried off a number of young goats and pigs.

DISTRICT 5 - CALIFORNIA DISTRICT

A Madera County Brunhild: No, it wasn't a thousand-acre fire, but that wasn't his fault. Whose? Why, a chap by the name of Chase, who worked for the San Joaquin Light & Power Company until Judge Short of O'Neals bastiled him for six months. On the way back to his job near the Crane Valley Dam from a vacation in Fresno, Chase and his friend drove off the road a hundred yards or so to eat lunch. He kicked away the dry grass and built a nice fire and then ducked into the machine to retrieve his coffeepot. Upon emerging he found himself in the fix of the Skandihoovian goddess who was ringed about with flame. Unlike that lady, however, he and his companion made a double quick get-away, but not quick enough to escape retribution at the hands of Forest Ranger Wofford of the Sierra National Forest, who on behalf of his Uncle Sam arrested the Chase person and conducted him before the J. P., who did the rest.

Mr. J. C. Dort has returned to Engineering after spending the last six months in Washington on the preparation of an office report covering the water power investigations in southeastern Alaska in 1922, as well as a manuscript on "Water Powers of Southeastern Alaska," covering all the investigations made by the writer and other engineers of the better known water power sites in the Tongass National Forest. A summary of these resources shows that approximately 332,000 primary horse power can be developed at the better-known sites, and the average power capacity of these sites is approximately 462,000 horse power. These power capacities have been computed on the basis of mechanical horse power at turbine shafts where the prime movers would be direct-connected to the grinders of a possible pulp and paper plant, or electrical horse power at motor shafts where the power sites would be developed electrically and the power transmitted to some central point. Many of these sites can be developed around $50 or $60 per installed horse power. This is a very low unit cost for power and a very favorable factor for the development of the pulp and paper industry in this region. This bulletin is to be published by the Federal Power Commission.

The recent legislation enacted by the Canadian Government will place an embargo upon the export of pulpwood from Canada. This will seriously affect a large number of pulp mills in the United States which are dependent upon Canada for their supply of raw products, but will tend to hasten the development of the newsprint industry in Alaska.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Literary Digest in on Forestry: This national weekly has recently conducted a nation-wide inquiry on the forest situation, the results of which will probably appear in print this fall. The questionnaire sent out to cooperators in D-6 was as follows:

1. Is the demand for timber increasing faster than the supply? If so, how soon is the shortage likely to produce famine prices that will cause a crisis in the industry?

2. Is there waste in present methods that can be reduced or eliminated?

3. Are there substitutes that can be used to relieve the shortage?

4. Are new sources of supply in prospect?

5. What steps do you recommend to remedy the situation?

Participation in Civic Affairs: Supervisor Weigle served this spring on at least two committees of the Seattle Chamber of Commerce for "Know Seattle Week." He has received very complimentary letters thanking him for his splendid work from the chairmen of the Speakers Committee and the Tourist Committee. Weigle is making the Forest Service known and known favorably in Seattle.

DISTRICT 7 - EASTERN DISTRICT

Speaking of Utilization: On a 20-acre plot in the White Mountain Forest at Bartlett, N. H., there is a Ranger Station and garage, a garden under agricultural special use permit, a grazing pasture under special use and grazing permits, and in winter the pasture is leased to a local outing club for winter sports, including skating rink, ski jump and toboggan slide.

Members and Guests of the American Legion and Legion Auxiliary of Oklahoma, numbering between 4,000 and 5,000 people, recently visited the Wichita Forest and Game Preserve. For inspection by his visitors Supervisor Shanklin rounded up one hundred buffaloes and twenty calves and explained the work of the Service in the development of this famous buffalo herd. In addition to the buffalo the Legionnaires and their friends viewed a number of the antelope, elk, and wild turkey of the preserve and were shown through Buffalo Lodge, the Forest headquarters. Cache and Lawton papers in reporting the event declare it to have been thoroughly enjoyable and instructive and indicate that local proprietary interest in the Wichita is growing rapidly.

A Beautiful Memorial Arch, erected at the Transylvania or Davidson River entrance to the Pisgah by popular subscription, was unveiled with appropriate ceremonies on Labor Day. The arch or entrance portal is built of native rock, the columns bearing bronze tablets on which are inscribed the names of the Transylvania County boys who fought in the World War. On the face of the arch, in massive letters, is the inscription, "Pisgah National Forest and Game Preserve." Above the center of the arch sits a bronze American eagle. The design of the structure is very pleasing and it constitutes not only a splendid memorial but also a unique and appropriate expression of the pride of the local people in the Pisgah Forest as a public institution.

Service Bulletin

U. S. FOREST SERVICE

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THE FOREST PROBLEM OF OUR UNITED STATES

By Col. William B. Greeley

Our country is still in the stage of extremely liberal use of forest products, engendered by the very abundance of our virgin resources and national habits which have made us preeminent as a nation of wood users. We are still in the stage, as well, of mining out our remaining forest resources with but slight and inadequate consideration for their restoration. We are using timber three or four times as fast as we are growing it. Undoubtedly the hard lessons of necessity will compel a material restriction in the use of forest-grown materials, a process which has already begun. Undoubtedly the same stern lessons will gradually compel a change in national habits of land use which will ultimately bring about a continuing and sustained supply of timber grown on the ample areas of land which we have available over and beyond other economic needs. This change in fact is now well started in the sections of the United States which have passed through the cycle of timber depletion to dependence upon distant and costly sources of forests products.

The most definite and effective step which the United States has yet taken to meet its forest problem has been the retention or placing of a little more than one-fifth of our total area of forest land under public ownership, with forms of management dedicated to the continuous production of timber crops. Our great and fundamental problem of the protection of forested and cut-over land, in all classes of ownership, from fire, is gradually being solved on the principle of public and private cooperation. The next step, that of bringing about real forestry practice on the four-fifths of our timber-growing land which remains in private ownership, is going to be a long and difficult task in whose accomplishment economic pressure will doubtless play the major part. Here again, however, the principle of public and private cooperation and the cooperation of Federal with State agencies, in both of which the American people have had extended experience and have developed something akin to a national genius, will be a powerful factor. And as a part of this cooperation the further principle of the public right to exercise reasonable restraints upon the utilization of natural resources will undoubtedly be recognized.

At the present juncture the forest problem of the United States is primarily one of public education. The nation is gradually responding to the warning of Roosevelt that forestry represents one of the most important internal problems of the United States. The current discussion of timber supply and reforestation far exceeds anything previously witnessed in this country. There is a constantly growing response to the movement initiated by the head of the Forest Service when he returned from military service overseas with the lessons of the World War as to the fundamental sources of national strength fresh in mind and urged far more general and effective national action for the restoration and perpetuation of one of our foremost natural resources. The honored President who has been taken from us placed the seal of his own approval and support upon a national program of Federal, State and private cooperation to secure a generous measure of reforestation. A committee of the

THE FOREST PROBLEM OF OUR UNITED STATES (Concluded)

United States Senate has spent much of the present summer in studying the reforestation problems of the several regions in this country. We are working out the problem, as we usually do work out such problems in the United States, through public study and public education of a sort that sooner or later reaches the everyday American citizen and commands his support.

FOLLOWING THE SQUIRRELS

By D. S. Alson, D-1

Match your wits with the little pine squirrel at his own game of cone caching, he hide, you find. The game doesn't go stale if you keep mentally alert.

A number of years ago while hunting a supply of Douglas fir cones I was much chagrined at having a little squirrel so completely "slip one over on me." Douglas fir cones generally are wormy, although from the outside they appear to be sound. These wormy cones fall to the ground and can not be detected from a supply freshly cut by the squirrel. Therefore I was anxious to find a cache, for squirrels store only the best cones. I found a squirrel at work, so hid myself to watch his trips and thus locate his cache. Trip number one was right past me and the cone deposited on the far side of a log lying in plain view. Likewise the second, and so on for seven trips. I now felt sure of his cache and had visions of perhaps three or four bushels of cones. When I looked there were SEVEN cones.

Likewise in the cutting operation they have drawn me away from the seat of operations to some tree where a few cones were cut for my special benefit.

In lean seed years these squirrels will store away for winter use any kind of cone; even cedar cones are cached. In prolific seed years the heavier seed, such as white and yellow pine cones, form the bulk of their winter store, but they seem to like variety, and add other species to their supply.

Cutting begins in the middle of August when the "seed is in the dough," i. e., the kernel the consistency of dough. At this time you will find the squirrels busy sampling the seed. Douglas fir and spruce ripen first and are therefore the first to be cached.

The squirrels work singly. The cones are cut from the branches with their teeth, but the operation is so fast it appears that the cones are pulled off. The cones are tossed out from the tree, perhaps so they won't lodge in the branches. The cones fall at the rate of about one every second.

They do not cut the cones haphazardly. It is because the squirrels select the cones having the best yield and the plumpest seed that makes it so desirable to get our seed supply from squirrel caches. Seed from caches are certain to be sound and fully matured.

Such little things as a tree leaning over running water so the cones when cut will be carried away are not overlooked - rather the tree is. And we have yet to hear of a cache being found with two species of cones in it.

There are different types of caches, but you will generally find them in moist places where such conditions are available. Small species such as spruce are generally found stored in little pits holding from a few cones to a peck, at the base of a tree, stump or log. Douglas fir are often cached in a hollow stump or a brush pile. White pine is commonly cached under large logs or in the space between two logs lying parallel. White pine caches have been found entirely under water. The largest cache on record contained 40 bushels of white pine cones.

One more point for the squirrel!

In one of our large collection jobs, the cone pickers got ahead of the packing, which resulted in large stacks of sacked cones being left along the trails until the pack trains could catch up with the work of hauling them to the mill. The cone pickers were paid on a piece rate basis tallied at the mill so were naturally concerned with these sacks of theirs lying around in the woods. The squirrels having found these sacks were busy reclaiming their cones. Two Frenchmen, the best pickers in camp, quit. When asked why, one exclaimed, "Zee leetle thief; I swipe heem one sack, and heem swipe me two sacks."

WHY FILE CLERKS GO MAD

By Tom Gill, Washington

If, as some one has said, "Language is a vehicle for concealing thought," file designations are turning out to be a six-cylinder perambulator concealing correspondence.

WHY FILE CLERKS GO MAD (Concluded)

I have before me several letters on an exhibit. The correspondence began boldly under the designation "P-Exhibits (National Canners' Association)." Concise, idiomatic, and to the point. A reply to the letter came back designated "RPLZ." Consternation in the file room! Next came several letters on the same subject disguised under the designation "RPL-Exhibits." This drew forth a reply meekly headed "P-Exhibits," and the answer came back "RPL." Some one then answered this letter who, lacking imagination, had to fall back on a previous designation, "P-Exhibits." A reply to this went one better and came in "R-Exhibits."

I am kissing this correspondence a fond farewell and sending the letters to files. Only by some miracle can they ever return as one happy family.

THE PAST YEAR IN GRAZING

By Will C. Barnes, Washington

In getting the material together for the Forester's annual report the figures show that at the present time we are cooperating with 733 separate livestock associations and the two National Associations. These are distributed as follows:

District 1	81	units
" 2	149	"
" 3	60	"
" 4	284	"
" 5	34	"
" 6	124	"
" 7	1	"

This is over 100 associations more than we have ever before had on our lists and shows that our efforts to secure the cooperation of the associations are bearing good fruit. Naturally one would expect District 4 to have by far the largest number, as the Mormons in that District are strong on cooperation. In no other District do we get the thoroughly friendly and enthusiastic cooperation with our livestock associations that we get there.

Turning to the question of fees, the total receipts for the fiscal year 1923 were $2,341,485. Last year the receipts were a little larger, being $2,415,612.

For the fiscal year 1923 the receipts from cattle and horses amounted to $1,444,000; for sheep and goats $873,000.

The receipts for the Districts show that District 4 had the largest, $695,000; District 2 coming next with $501,000. District 4 is also at the top of the list with $342,000 cattle receipts and $349,000 sheep receipts. Oddly enough the State of Colorado, which is in District 2, paid the largest amount in fees, $363,000; Arizona coming next with $318,000. The largest amount of cattle fees from any one State was $265,000 from Arizona; the largest amount of fees from sheep came from Colorado, $123,000.

District 7 distinguished itself by collecting $12.82 in grazing fees from stockgrowers in the State of Maine, and reported a single grazing trespass case for the whole District for the large sum of $1.

FOREST RANGERS' COOK BOOK

(Receipts prepared by Supervisor Cunningham of the Sequoia)

Fire Pudding

Take a liberal slice of our timber-covered mountains, sprinkle liberally with deer hunters (be sure and get as many careless ones as possible), garnish well with tailor-made cigarettes and bake and brown with unextinguished camp fires.

Hot Cakes

Take a hunter out of season, an angler without a license and a camper without a fire permit. Put in one game warden and one forest ranger and stir until well mixed. Place in the Justice Court. Remove the officers and season the balance with judicial advice and bake in the county jail for 30 days.

FOREST RANGERS' COOK BOOK (Concluded)

Angel Food Cake

Take 1 dozen careful campers, 1 dozen law-abiding hunters and one dozen licensed anglers, place in nice shady camp, where all cans and refuse have been buried, mix with one ranger, sprinkle with interesting songs, stories and jokes and serve during summer evenings.

Hot Buns

Get a nice plump city dude who has just shot a fawn, cover with arrest, shake off all excuses, get a commitment (judges' brand preferred) and let boil 90 days in the county jail. If very tough, boil for a longer period.

Perfection Pie

Take 2 cattlemen and liberal supply of campers. Have cattlemen drive cattle to camp ground and salt. Have campers dog cattle away from salt and water. Mix with personal opinions and serve separately with Irish temper to forest officers.

Fire Prevention Pie

Take a nice shady camp, a nice cold spring, a happy family, a camp fire permit, a careful smoker and mix with common sense, season with respect for others and serve them, boy, with every kindness possible.

WASHINGTON NOTES

Lumbermen to Aid Japan: Steps are being taken by the Pacific Coast lumbermen to prevent the distress of the Japanese people being exploited by speculators. The National Association of Lumber Manufacturers has been petitioned to do everything in its power to prevent speculators from holding up the unfortunate people of Japan and to cooperate with those who are raising funds to relieve their sufferings.

The National Headquarters of the Red Cross have arranged for the immediate shipment of 9,000,000 feet of lumber, 6,000,000 feet of which was donated by two western lumber companies.

It is estimated that the rebuilding of the wrecked portion of Japan will call for the enormous amount of 3,750,000,000 feet of lumber. This is more than all the mills of Japan could produce in a year and a half, but it is not much more than a normal month's output of the American sawmills. Outside of British Columbia the United States is the only available source of supply for Japanese lumber requirements. The sudden addition of 3,750,000,000 feet to the current demand, especially if accompanied by the granting of options to speculators, might result in the absence of precautions that are being taken in the establishment of excessive prices for the lumber needed by Japan at this time. It is believed that the mills will concentrate on filling pending Japanese orders and also those arising from the emergency, deferring as much as possible a portion of the domestic and other export business meantime.

"A Fight to the Death between a Jack and a Stallion" is the title of an illustrated thriller by Will C. Barnes in the September issue of FARM AND FIRESIDE.

Assistant Forester Herbert A. Smith left on September 14 for an inspection trip in the White Mountains.

FOREST PRODUCTS LABORATORY

Another Laboratory Man Gets Patent: One more patent was added to those "dedicated to the citizens of the United States" when Mr. Rolf Thelen received a patent for the reversible circulation internal fan kiln.

This kiln has already been successfully used in the drying of Douglas fir, and another installation is now being made in the South.

In the West, a battery of twenty-five of these kilns is being erected by a big Douglas fir operator and one of the prominent dry kiln companies has an experimental dry kiln in operation in the region. The equipment has also been added to one of the Laboratory kilns.

FOREST PRODUCTS LABORATORY (Concluded)

Army to Kiln Dry Its Own Lumber: A request for information concerning the erection of a dry kiln was recently received by the Forest Service from the Army organization.

The dry kiln to be built is to season the lumber which the Army will use for constructing 55 one-story buildings that are to house over 3,000 men on the military reservation at Benning, Georgia. On this reservation of 96,000 acres are 50,000,000 feet of pine from which will be cut and dried 1,500,000 feet for the new cantonment.

Sixty Chinese College Students Visit the Laboratory: Sixty Chinese men and women visited the Laboratory during a Madison convention of Chinese students who are attending various colleges in the West and Middle West. Although these are not forestry students, it was evident from their questions that on their return to China, they will display a keen interest in the extension of forestry in their own land.

FOREST EXPERIMENT STATIONS

Natural Reproduction After Fires: A study made by J. A. Larsen of the Priest River Forest Experiment Station during 1921 and 1922 on the burned-over land of the Clearwater Forest shows some very interesting results. Approximately 60 per cent of the entire Forest was burned in 1910 and reburned in 1919. Seventy-three per cent of the burned land is now restocking, and 57 per cent of this area is coming back to white pine, where white pine constitutes 10 or more per cent of the reproduction. Most of this burned-over land is woefully understocked, as 75 per cent of the area reproducing has less than 100 seedlings per acre, and only about 15 per cent of the area is restocking satisfactorily. Most of the white pine seedlings came up two or three years after the fire of 1910, while the 1919 burned areas are reproducing chiefly along the immediate edges of the burned area or near seed trees. Areas burned in 1910 and 1919 both show, as yet, no natural reproduction.

On the Coeur d'Alene Forest, the areas with slashings burned in these fires show no reproduction whatever, for there are no seed trees and the fires were exceedingly destructive. On one area, burned only in 1919, reproduction is plentiful where once was a stand 100 years old, while on areas with a stand of trees less than 40 years no new growth has appeared. Apparently the younger stands did not produce seed.

Forestry or Oil: A tale of woe reaches us from the Southern Forest Experiment Station, for oil has been found at Urania, La., and the sample plot work there may find itself swimming in oil and derricks may grow where only trees grew heretofore. Truly, life at a forest experiment station is just one thing after another.

DISTRICT 1 - NORTHERN DISTRICT

Highest Peak in Montana Climbed by Forest Service Party: Granite Peak, in the Beartooth Forest, elevation 12,842, and the highest known peak in Montana, has long been an object for ambitious mountain climbers. Its ascent was first attempted in 1899 by James B. Kimball, who published a description of the region as a bulletin of the American Geographical Society. Mr. Kimball's party succeeded in getting within a few hundred feet of the summit, but were forced to turn back. Several later attempts have been made by parties from Billings, but without success. It remained for the Forest Service to lead the way, and on August 28 Forest Supervisors Ferguson and Whitham and Assistant District Forester Koch succeeded in reaching the summit. The mountain is a very precipitous, chisel-edge ridge, and the last 800 or 900 feet of the climb is practically all precipitous climbing, necessitating very careful work in edging around narrow ledges and up crevices wherever a hand-hold could be obtained. The party left an American flag on the summit as evidence of their success.--E.K.

DISTRICT 1 (Concluded)

Smokechaser (observing jewel on vesture of highly educated lookout) "What bane dat pin?"

H.E.Lookout: "Class pin."

"W'ere you bane get him?

"Yale."

"All fallers get yust sam' kind?"

"Yes, all the fellows who were in at the same time."

"How long yu bane in?"

"One year."

"By yee! Aye bane in yail two yare and Aye never get no pin!"

A Suggestion: You have all noticed the tendency of the average citizen to drop casually into your office and confidently request information in regard to the status of the grapefruit industry in Florida, the best method of handling reindeer, or other matters of which you are probably sublimely ignorant. Mr. Ordinary Citizen innocently regards us as representatives of the United States Government, or at least of the Department of Agriculture instead of as mere foresters. And he has a right to do so. We are often forced to answer to the effect that we have troubles of our own, and to suggest that he write to the Secretary of the Department involved, and we may possibly even get the wrong department.

Now for the suggestion: Let each Supervisor's office be furnished with an abbreviated Government directory showing the bureaus in each department and the matters with which they are concerned. Let us further keep uo-to-date in each office a directory of local officials whom the public deals with - such men as the predatory animal inspectors, officials of the B.A.I., and Land Office officials.

Furthermore, why shouldn't our offices be a sort of local headquarters for traveling officials of the Department? Often it would be possible to furnish desk room for a day or two and possibly stenographic assistance to these homeless wanderers, and not only effect an economy but also secure closer contact between our somewhat loosely connected bureaus. Incidentally, the result would tend to produce a class of traveling "boosters" for the Service, - it would aid in selling the Service to other members of our Department. What do you think?--J.B.T.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Young Plantation Doing Well: Supervisor Richey of the Holy Cross and Forest Examiner Johnson of the District office recently examined a 50-acre plantation of Engelmann spruce which was planted on the Holy Cross Forest above Pando in the spring of 1921.

The spruce was the last shipment of nursery stock from the abandoned Cottonwood Nursery in D-4. It was an excellent grade of stock, the planting conditions were favorable, and the recent inspection showed only 4 per cent loss at the close of the third growing season. It is believed that this is a record for high survival of Engelmann spruce. The trees were planted on an old Engelmann spruce burn.

High Altitude Sheep Grazing in 1923: The season has been unusually wet over most parts of the District and there is some comment among sheepmen that sheep on the high ranges have not done as well as normally on account of this condition. Ordinarily, we would expect a better condition of lambs with this sort of season, but there is such a thing in the high altitude as having the wet conditions continue too long.

There is some comment on cattle ranges being too wet and feed not hardening in time to condition the cattle before the usual shipment periods.

DISTRICT 3 - SOUTHWESTERN DISTRICT

New Mexico's Game Refuges: At a recent meeting of the New Mexico Game Commission at Santa Fe, eight new game refuges were established in the State. They are the Mount Taylor on the Manzano, the Ruidoso, Gallinas and Little Dog Canyon on the Lincoln, the Burro Mountain, Bullard Peak and Sapello on the Gila, and the Senorito on the Santa Fe. All of the new refuges are small, each being less than three townships in area. The theory is that the game will there find breeding and resting places. The overflow from there should ultimately give much better hunting in the State.

In addition, the Game Commission approved the Gila fish hatchery and assigned a permanent deputy game warden to the Mogollon Mountains. The site of the hatchery was not definitely determined, although it will be somewhere on the headwaters of the Gila River in the Gila Forest.

The action taken on the refuges and the hatchery is the result of recommendations of the New Mexico Game Protective Association and completes the legislative program mapped out by this organization for the present year.

Forest Conservation for New Mexico Schools: A new book just issued by State Board of Education of New Mexico entitled, "New Mexico Common Schools, Course of Study," contains a chapter on "Our Forests - Necessity for Conservation," prepared by the District office at the request of the State Superintendent of Public Instruction. The course of study is intended to aid the teachers and is not to be used as a text-book by the children themselves. Incidentally, it may be mentioned that Miss Eckles, the State Superintendent, expressed herself as entirely in sympathy with the Forest conservation movement. She stated that she was anxious to have Forest Service employees address school children whenever opportunity afforded, since in no other way could the children become more interested in the Forests of the State and their importance to the welfare of their communities.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Proposed Sale of Timber on the Payette: As a result of an application to purchase appraisal of a stand of timber approximating 48 million feet on an area of 5,167 acres on Beaver and Peersol creeks, Payette National Forest, has been made and advertisement for the sale of this timber is being run in the Salt Lake Tribune, Idaho Daily Statesman, Spokesman Review at Spokane, American Lumberman at Chicago, and the Timberman at Portland. Bids for this timber will be received by the District Forester at Ogden up until 2 o'clock p. m., October 30, 1923. The minimum stumpage prices which will be considered are $3.50 per M for western yellow pine and $1.00 per M for all other species. The total cut on this area consists of 37 million feet of western yellow pine, 7,100,000 feet of Douglas fir and larch, and 4,200,000 feet of white fir, spruce, and lodgepole pine, making a total of 48,300,000 feet. Before bids are submitted full information concerning the character of the timber, conditions of sale, deposits and submission of bids should be obtained from the District Forester at Ogden or the Forest Supervisor at Emmett. A "Sale Prospectus" covering this chance will be furnished any interested party upon request.

Pine White Butterfly: The pine butterfly is again very active on the Idaho and Payette Forests. The yellow pine timber adjacent to Long Valley has been practically defoliated during the last six weeks and the butterflies are present in countless numbers, indicating further action next year. On the Hoff and Brown sale on the Idaho, the yellow pine seed trees and the other yellow pine left are practically stripped of their needles. The situation looks very serious. It may be that the yellow pine will recover from the defoliation itself, but there is great danger that other insect depredation will follow.

Leaving for South America: Forest Ranger Ned Foster on the Challis Forest has submitted his resignation effective September 30. It is understood that Ranger Foster will go to South America to assume charge of a large cattle outfit. We are informed that his salary will be $200 per month.

DISTRICT 5 - CALIFORNIA DISTRICT

Roads and Trails: Some interesting statistics on road and trail work in California are obtained from a tabulation and curve prepared for use in hearings of the Senate Reforestation Committee. From 1906 to 1922 inclusive, the total amount of Federal expenditures (all funds) has been $3,071,736.66. Of this amount $1,743,272.14 has been expended in the construction of 118.8 miles of Major roads; $341,484.98 in the construction of 341.8 miles of Minor roads; and $335,224.43 on 1,185.7 miles of trail. During this period Cooperative funds to the extent of $788,559.54 have been expended. From 1914 to 1922 inclusive, $241,884.22 was spent for Maintenance of roads and trails, and $409,870.89 for Overhead and Equipment. The tabulation and curve show a steady increase in yearly "Federal Expenditures" from 1917 on, but "Cooperative Expenditures" have varied greatly since 1912 - 1915 being the lowest.

New Industry For Angeles Forest: "Hello, Supervisor Charlton! Send me down a couple of dozen nice little butterflies. I'm giving a party tonight."

This conversation, which may be heard frequently in the near future, will not have reference to chorus girls or movie girls, or in fact any other kind of girl of the "butterfly" type. Far be it from such. It will refer to plain unadulterated butterflies.

Los Angeles, they say, is the starting place for more freak industries than any other city in the world. When a fox ranch and a lion ranch and an ostrich ranch and an alligator ranch were established in that neck of the woods, people said the limit had been reached. But not so. Recently a formal application to establish a forty-acre butterfly ranch in Cajon Pass was received in the office of the Angeles National Forest. The "crop" of butterflies will be raised for commercial and decorative purposes, and thousands will perish in alcohol or be transfixed to the pages of entomologists' text-books.

If the permit is granted it is the intention of the Supervisor to require feed-lot counts before the lepidopterous insects are turned forth to graze on the Forest, and that a "wrangler" equipped with an airplane be employed.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Interest Spreading: Mr. Donald McFadon of the Maine Logging Company, Tacoma, heard Dr. Hofmann's talk on relative humidity at the Logging Congress last fall and is very much interested in the matter. He intends to purchase one of the pocket sling psychrometers and has asked for all available data on the subject. Mr. Hofmann and W. B. Osborne have just prepared for printing a brief resume of conclusions reached to date on relative humidity and forest fires. This will be issued at once, with several cuts, and copies will be supplied to all field officers of the Forest Service and the State and Assn. wardens. It was made possible by the cooperation of the Western Forestry & Conservation Association.

P. O. Cedar: Three Port Orford cedar separator box boards, 6" x 1/8" - 18", have just been received from Forest Supervisor MacDaniels. The boards were cut in the mill of C. H. Pearse, Port Orford, Ore., in a little mill that he and his wife run. He logs his own timber by horse, operates his mill with a gas engine, and hauls his product to market in a Ford.

In the production of these boards, Mr. Pearse is utilizing so-called waste material from cut-over cedar land. Mr. MacDaniels feels that cut-over cedar lands of that region will be re-logged for short length material provided the price for this class of product holds or advances.--W.H.G.

Putting it Into Practice: Miss Maude Stone, D-6's librarian, took a course in public speaking the past winter, in the University of Oregon extension course. She practiced a little recently by giving a forestry talk before several groups of Portland Camp Fire Girls.

Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

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NINE-FOOT ROADS ARE NOT ROADS AT ALL

By H. N. Wheeler, D-2

Roads too narrow or so constructed as to fail to answer the purpose for which they were built are not really roads at all, and the money expended is an economic loss. A nine-foot scar along a canon wall or hill slope is only a good trail and can not be really classed as a road. With no ditch, or only a poor imitation of one on the inside, the first principle of road construction - drainage - is lacking. Earth is constantly slipping down and narrowing the supposed roadway by blocking it entirely or filling it on the inside so that to drive over it may cause the car to slide or be thrown to the outside and over the edge of the road. On such a so-called road, even when in good condition, there is only one place to drive, and to vary only a few inches may mean disaster. If the driver relaxes his vigilance for the fraction of a second, or sneezes or coughs, he may give the wheel a slight turn and plunge the car with himself and companions over the edge or into the hill and injure the machine.

A man driving a White truck loaded with children drove off the Trappers Lake road, killing his sister and crippling a child. It is said he was going too fast. I do not know the possible speed of a White truck up a moderate grade, but is it not possible that after driving forty miles over a winding so-called nine-foot road he couldn't stand the strain and the accident resulted? Another man driving a Dodge on the same road went over the edge and was rescued by a Winton-Six sedan from Cleveland, Ohio. The occupants of this latter car were much exercised over the road and were very fearful of a successful return. They did not hesitate to roast everything about Colorado in general and the builders of that road in particular. An isolated case you say. But if anyone has heard any praise whatever of the so-called nine-foot roads by those who have traveled them will they not please speak up?

A prominent citizen of Fort Collins, when asked if he had been over our Bennett Creek road on the Colorado, replied that he had but wouldn't go again because his wife was so frightened she would not go again nor let him.

Why build roads for travel if they can't be used? Better far to build no roads than these nine-foot mistakes. Is it too much to say that by constructing them and throwing them open to the public the Forest Service endangers life and property? Public Relations is concerned about this matter. We are looking for the approval of the public and yet we deliberately spend money in this "penny wise" sort of way and receive only the condemnation of the public and give to our enemies a talking point for placing our recreation areas in National Parks.

Hardy mountaineers, accustomed to driving over all sorts of rough roads, hesitate about going over these nine-foot trails, and people from the Plains States try them only once or not at all. There is no such thing as a nine-foot automobile road, and if there is demand for a road at all, certainly it should be not less than a twelve-foot road with an adequate drainage system and turnouts on all curves and other places frequently enough to make travel reasonably safe.

PLANT COLLECTING SHOULD BE ENCOURAGED

By Will C. Barnes, Washington

In my early experience in the West, in common with the majority of the local people, I used to view with considerable amusement the work of the men wearing "funny" clothes who went over the country pulling up by the roots and preserving carefully all the weeds and plants and grasses they could get their hands on. We classed all such under the common name of "Bug Hunters."

I remember well a young cow puncher remarking one day as he watched one of these men at work in the round-up camp: "These here bug hunter chaps are doing a sight more damage to the range than the old cows, for they pull up all the grass and weeds by the roots leavin' nothin' for the stock."

Later on in life, as I began to accumulate experience and with it some wisdom, I realized why men take such keen interest in plant collecting. In addition to the pleasure of the work there is always the possibility of finding some new and hitherto unknown plant to which your name might be attached and thus send your name down in history as the first discoverer of some new grass or weed.

Several of our Forest officers have had the pleasure of discovering new plants in their plant collecting work. Looking over our herbarium records, my attention was directed to the enthusiasm and success of Deputy Supervisor Robert Thompson of the Coronado Forest in Arizona. Thompson has been a persistent plant collector for several years past, having sent in more than a hundred specimens from the two Forests on which he has worked, the Tonto and the Coronado. Of the plants sent in from the Coronado one has been kept for the United States National Herbarium, one new grass discovered for Arizona, two grass genera are new to the Forest Service, six general of "weeds" and shrubs are new to the Forest Service, one family new to the Forest Service, two species possibly new to science, and four additions to the known grasses of District 3.

This seems to be a mighty good record for one man and should encourage others to continue this kind of grazing work. The main point in surveying Thompson's work is that he has evidently not been satisfied with simply gathering up anything in the way of plants, no matter how common, but seems to have searched in the odd corners of his ranges for hitherto undiscovered specimens - a mighty fine scheme.

CONCERNING TYPES OF THUNDERSTORMS

By H. T. Gisborne, Priest River Exp. Sta.

Thunderstorms are classified by meteorologists into five types: cyclonic, tornadic, trough, border, and heat storms. It is generally possible for the District Forecasters of the Weather Bureau to forecast the first four types. The heat type storms form locally, however, and can only be forecast by observations made on the ground. When such storms occur in forested country far from Weather Bureau stations, they are largely unheralded. The heat type storms, therefore, should receive special consideration in their relation to forest fires.

The Monthly Weather Review for June, 1922, describes two kinds of heat storms, one known as the local or heat thunderstorm, and the other the topographic thunderstorm. In writing of the local or heat thunderstorm, Mr. Charles F. Brooks explains the formation and growth of such a storm as resulting from the excessive heating of the lower air and ground surface. This hotter air naturally tends to rise into the cooler, upper atmosphere, its rise being favored by high humidity, winds of uniform direction and low velocity, and a large drop in temperature for increasing elevation above the ground. The rapid rise of the hot, humid air into the cold, upper levels results in rapid condensation and the formation of cumulus clouds or thunderheads. This action seems to take place very easily over areas where large volumes of moist air are readily warmed and free to rise, as over broad expanses of meadowland, river flats and warm lakes.

Mr. Brooks points out that there are six different conditions which indicate the approach of heat thunderstorms. These conditions are: light winds, uniform wind direction, comparatively high temperatures at the surface of the earth, cold aloft, high absolute and relative humidity, and moist air up to 10,000 or 15,000 feet elevation. If all of these conditions prevail in the morning, the indications are that heat thunderstorms will very likely occur during the afternoon or evening. If one or more of them do not exist, the chances of a heat storm are greatly reduced.

Concerning the topographic thunderstorm, Mr. Cleve Hallenbeck describes it as very similar to the preceding, except that instead of originating over broad expanses of meadowland or warm lakes, it occurs in the mountains where the topography is such that it deflects the warm surface winds sharply upwards into the colder currents aloft. When this deflected air current contains sufficient moisture so that a large amount of condensation occurs in the colder, upper atmosphere, large cumulus clouds are formed, and if the condensation is sufficiently great lightning is often generated and a topographic thunderstorm results.

ANOTHER FIRE EXTINGUISHER TESTIMONIAL

By E. R. McKee, Florida

During the summer of 1914 I had occasion to use some left-over bridge paint, and to make it easier to apply, I filled an old iron pot about two-thirds full and set it on the hot stove to warm it up a bit. I had stepped out of the kitchen a moment when my wife called to me that the pot was boiling over. When I reached the kitchen the pot of boiling over paint was afire. I grabbed a broom and got the handle under the bail of the pot and made for the door, leaving a streak of burning paint on the floor behind. Disposing of the pot and the small quantity of burning paint left in it in the back yard, I turned to the streak of fire I had left in the kitchen. The Underwriters' Fire Extinguisher being near the stove, it was only a moment until I was playing the liquid on the fire, and in a few moments the fire was extinguished. Water would probably have put the fire out, but valuable time would have been lost in pumping the water. The extinguisher was right on the job. I did not make any official report of this, but a very black streak about 14 inches wide leading from the kitchen stove to the door, which no manner of scrubbing would remove, bore mute evidence of the experience until the floor was replaced several years later.

This experience was recalled to mind several months ago by reading in the Bulletin of a Ranger Station being burned under practically the same circumstances.

Incidentally, during 1919 the Florida became the proud possessor of a Ford truck. Among other things it was equipped with a Pyrene. In examining the extinguisher one day I inquired of the Guard who had been driving the truck what had become of the liquid in the extinguisher. His reply was that he had been using it on snakes and that it sure would knock them out.

AN ALASKAN PIONEER

By W. A. Dayton, Washington

A certain interest, both sentimental and practical, attaches to first efforts along any line of endeavor or achievement. What appears to be the first collection of plants made on an Alaskan National Forest has recently come to the writer's knowledge, viz., the "First Tongass Collection," made by Mrs. J. C. Dort, the wife of Assistant District Engineer J. C. Dort (who was assigned to District 8 for water power investigations) during June to October, 1922, on the Tongass National Forest. There are three sets of Mrs. Dort's plants, one being filed with Prof. Jepson at Berkeley, California; another at Forest Service headquarters at Juneau, Alaska; the other being retained by the collector personally.

Through the kind instrumentality of Mr. Leland S. Smith of the Modoc Forest, Mrs. Dort has filed a list of these Tongass plants with the Washington office of Grazing. There are 137 specimens listed, representing 136 species, 108 genera, and 46 families (including 3 families of cryptogams, or nonflowering plants). The identifications have been made by Mr. Paul C. Standley, Assistant Curator of Plants, U. S. National Museum (known to the Forest Service as joint-author of the well-known Flora of New Mexico). Mr. Standley has prepared, in collaboration with Dr. Coville, Botanist of the Bureau of Plant

AN ALASKAN PIONEER (Concluded)

Industry, a Flora of Alaska. Mrs. Dort states that this publication is awaited with keen interest by Alaskans interested in botany; she was asked questions on identification which only a botanist could answer. We understand that Mr. Standley was much interested in Mrs. Dort's collection and kept five sheets for the U. S. National Herbarium. These included the white laurel (*Kalmia occidentalis*) which is rare in Alaska; a small saxifrage (*Saxifraga tolmiei*) which is rarely found anywhere; two introduced weeds, the field thistle (*Cirsium arvense*) and the smartweed (*Polygonum pennsylvanicum*) which had not been previously reported from Alaska; and the jewel weed (*Impatiens occidentalis*).

It may be of interest to note that 55 (or almost half) of Mrs. Dort's species are not on our list of National Forest range plants. These 55 species represent 3 families (*Droseraceae*, *Lentibulariaceae*, and *Menyanthaceae*) and 13 genera (*Andromeda*, *Cladonia*, *Cladothamnus*, *Cochlearia*, *Drosera*, *Harrimanella*, *Honkenya*, *Loiseleuria*, *Nephrophyllidium*, *Oxycoccus*, *Pinguicula*, *Romanzoffia*, and *Struthiopteris*) not included in our catalogue of National Forest range plants.

No trees are represented in Mrs. Dort's list unless some would consider the shrubby *Sambucus pubens* and *Viburnum pauciflorum* as relegable to that category; besides these, 24 other names of shrubs or suffruticulose plants appear. Mrs. Dort has collected two sedges and one rush, but no true grasses appear on her list. The following synopsis of chief plant families represented will be of interest to ecologists and others who deem plant distribution data "*non aliena ab illos*:"

Chief Families Represented by Mrs. Dort's Collection

No. of species	No. of genera		English name of family
18	13	Ericaceae (including Vacciniaceae & Pyrolaceae)	Heaths (including huckleberries & shinleafs)
13	12	Compositae (including Cichoriaceae)	Composite (Daisy)
12	9	Rosaceae	Rose
10	7	Ranunculaceae	Buttercup (Crowfoot)
9	4	Scrophulariaceae	Figwort-Snapdragon
7	6	Liliaceae (including Convallariaceae & Melanthaceae)	Lilies (including Solomon's-seals & bunchflowers)
7	4	Saxifragaceae (including Grossulariaceae & Parnassiaceae)	Saxifrages (including currants & parnassias)
5	5	Cruciferae	Mustard
81	60		

Mrs. Dort states that Mr. Thomas Murray, Ranger at Ketchikan, will continue the collection.

WASHINGTON NOTES

Zip - Bang! Another Bull's-Eye! Forest Service folks scored another hit when they registered 43 articles out of a possible 57 listed in the "Articles in Current Publications" column of the September 19 issue of the Official Record. This was more than 76 per cent of the total. The Associate Forester queried the Public Relations Branch to know why the Service didn't score 99.4 per cent. Well, we probably would have if a few fires hadn't taken up some of the time of the field force.

Just wait until after the fire season is over!

New York Breaks Reforestation Records: New York has broken all previous records in reforestation this season by planting on its waste land areas all the trees which its nurseries could supply. More than seven million trees were planted in the State this spring, and it is predicted that the fall planting season will swell the number to twelve million. Municipal forestry is an adopted principle in the State and is now under way in more than thirty municipalities. County and school district forests are springing up rapidly and the youth of this State are being instructed in the way which leads eventually to perpetual supplies of timber.--"The Seed Tree."

A Letter from Arkansas: "Secretary of Agriculture Forester, Washington. Sometimes we cut cottonwoods or oaks and they come up from the roots and sometimes they don't? Can you tell me why. I should like to know as you sometimes want them to do differently from the way they do. Yours respectively, __________"

FOREST PRODUCTS LABORATORY

Distinguished English Guests: General Lord Lovat, Chairman of the British Forestry Commission and with whom Colonel Greeley was closely associated in France, Mr. C. E. Legat, Chief Conservator of Forests in South Africa, and Professor R. S. Troup, head of the forestry school at the University of Oxford, were recent Laboratory visitors.

Reducing Utilization Losses of White Fir: In the study of losses in white fir made at a California plant, it was found that splits and seasoning checks, probably of a preventable nature, account for 53 per cent of the white fir loss.
The determination of the causes of these losses has an important bearing on a National Forest timber sale, as the operator claimed that the white fir was being cut at a loss at the contract price. Recommendations have been made to the operator which should greatly reduce all losses.

More Sawdust for the Cows: A ton of Douglas fir sawdust from the Pacific Coast has just arrived to be made into appetizing meals for the blue-blooded cows at the Massachusetts Agricultural Experiment Station. The proposed feeding experiment will continue for six months, and if good results are obtained, it will be followed by more complete feeding tests.

Laboratory Courses Draw Well: One man from Australia, another from Canada, and one woman were among the 28 students who took the kiln drying and lumber salesman courses given at the Laboratory beginning September 10.

FOREST EXPERIMENT STATIONS

Fire Studies: In a study made by H. T. Gisborne of the Priest River Forest Experiment Station in 1922, it was found that there were practically the same number of days with storms in northern Idaho as in western Montana, yet there were four times as many lightning fires per 100,000 acres in north Idaho. Seven peaks of lightning danger occurred during the year, including 15 days of July and August, which are the two most dangerous months. During this 15-day period, one-third of the lookouts reported storms each day. To get this storm data used in this study 146 stations throughout D-1 reported. Nearly 1,300 reports were received making this the largest widespread study of lightning over a limited area yet recorded.

But Was It? The experimental work at the Southern Forest Experiment Station on the Naval Stores study was interrupted by the sudden defection of the white boy who has been chipping the slash pine for us. His only reason for quitting is his feeling that chipping is beneath his dignity. He quit the day after his picture was taken.

DISTRICT 1 - NORTHERN DISTRICT

This Wins the Cactus Sleeping Bag: Ranger Larsen (Cabinet) was blazing trail last spring through a very heavy stand of young growth on Cataract Creek. He was working along probably a half mile from the crew. He heard a noise in the underbrush but went on working, paying no attention to it; but presently the noise became louder and nearer. Larsen looked around and discovered, about thirty feet from him and coming toward him on a dead run, a grizzly bear. Larsen was standing near a tree, which was the only tree within three or four hundred yards, and he lost no time in starting to the top. But the bear lost no time, either, and when Larsen was about eighteen feet from the ground, the bear caught him, grabbed his foot, and tried to pull him from the tree. The bear let loose of the tree and hung with his mouth to Larsen's foot. Finally Larsen's shoe broke under the strain, pulled in two, the heel came off from it, and the bear and part of the shoe dropped to the ground. Larsen stayed in the tree long enough to give the bear plenty of chance to get out of sight and went back to the crew.

The next day he went back with a rifle and discovered that the grizzly had been feeding off another bear which Larsen had shot the week before. At the time he shot he did not know that he had hit the bear, but the grizzly had it about half consumed. Aside from a scratched foot, a lost shoe, and a bad scare, Larsen suffered no damages.

No Smoking Rule Adopted: Members of the Coeur d'Alene Timber Protective Association are now using a sign which announces boldly that smoking is prohibited on their operations between June 1 and September 15. This move is an indication that the lumbermen are not satisfied with the patient persuasive policy, and are now proceeding to try a more drastic remedy.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Moffat Tunnel Plans Agreed Upon: On September 21 stipulations were agreed upon between the Moffat Tunnel Commission and the U. S. Forest Service. After many years of various kinds of propositions the bonds have finally been sold for the tunnel and the contract let for the job. Both portals are on National Forest ground.

Swamp Drainage Opposed: A decided agitation is under way against the drainage of waste swamp lands along the course of the Mississippi River and other streams. The Isaak Walton League, which has become very strong in the Middle West, is taking the lead but the various State Forestry organizations are getting behind it and it is beginning to look as though a material impetus will be given to a movement to establish forests along not only the Mississippi but other prominent watercourses.

Some of the communities in middle and northern Minnesota are reluctantly admitting they have accomplished nothing by draining their swamp lands and lakes to make way for agriculture, and a serious mistake was made in cutting timber along the lake shores because of the bad effect upon the tourist business. However, they are not ready to admit yet that ground fires are injurious even to farming lands.

The Lookout Was On the Job: On September 15 two woodsmen employed on the Warren-Lamb Lumber Company's Slate Creek sale on the Black Hills sat down against a brush pile to eat lunch. Their usual dessert is a cigarette. When one of them started to light up, the match broke and the head flew into the brush pile, setting it afire. They decided to let the pile burn rather than try to put it out, and watched it until it was consumed and then went back to their work thinking no more about the matter.

Eighteen miles away, as the crow flies, Forest Guard Frank Tower was shingling the new lookout station and at the same time keeping his weather eye on the landscape. He spotted the thin wisp of smoke, and his report came in at 12.20 (" small fire near the head of the Slate Creek sale.") A Forest officer was dispatched to the scene and he picked up the company's wood's superintendent and crew foreman. The three men spent the greater part of the afternoon looking for the fire but without avail. Finally the cause of their wild goose chase came to light. Now the company has issued instructions to its employees, "No smoking in the woods outside of camp for the remainder of the fire season."--G.A.D.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Carrying Capacity vs. Yellow Pine Reproduction: In 1916 a grazing reconnaissance was made on the Sitgreaves Forest. At that time the seedlings from the 1913 seed crop were just beginning to show up in abundance. In August, 1923, the writer made a check reconnaissance of about four typical sections to determine the loss in carrying capacity on account of reproduction. The results of this check reconnaissance show a loss on one allotment in the Yellow Pine type of from 10 to 15 per cent and on another allotment of from 30 to 50 per cent. This loss in grazing capacity is not due entirely to loss in density or surface covered, but to loss in vitality of the forage species. In other words, the competition between the seedlings and forage species has resulted in a greatly decreased production of leafy growth. Observations show that where reproduction is in dense stands there is a gradual loss in density until the reproduction reaches approximately three feet in height. After the reproduction reaches this height practically no forage survives underneath it, due to competition, and needles. One interesting thing to note is where reproduction occurs in these dense stands over large areas there is little or no evidence of damage by sheep grazing, although the areas have been heavily grazed by this class of stock for years. Apparently reproduction in such cases will take care of itself and eliminate sheep grazing.--P.H.R.

Turpentine for Sale: There appeared in the Albuquerque Morning Journal of the September 13th issue a "Notice of Sale of Turpentine Rights." This notice states that contract of 180,000 cups, to be placed during a period of seven years at a minimum price of $30.00 per thousand cups per season is being offered on 6,500 acres on the Sitgreaves National Forest.

This is the first time in the history of District 3 that such a notice has appeared. In addition to the appearance in the local papers, advertisement will be placed in the Southern Lumberman and in the Naval Stores Review.

This office has prepared a prospectus giving information regarding this, and if any Supervisor is interested, we will be glad to send such copies as he can use.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Watershed Protection: The benefits of watershed protection are very strikingly shown in the canyons around Salt Lake City, which have recently been visited by Forest Examiner F. S. Baker, in company with Professor J. H. Paul of the University of Utah. Perhaps the most striking single instance, particularly in connection with the recent floods of northern Utah, is the case of City Creek Canyon. On the night of August 13 - the date of the Farmington Flood - approximately the same amount of rain fell in the city of Farmington, Salt Lake City, and at the station maintained well up in City Creek Canyon. Farmington Canyon had a disastrous flood - City Creek rose about .3 of a foot. The difference not hard to see. Through all the unprotected region, of which Farmington Canyon is a part, the ridges are bare on top. At the head of City Creek Canyon a thick growth of sagebrush and snowberry runs clear up on the tops of the divide, otherwise no difference can be seen.

On August 30, a heavy rain fell in Salt Lake, especially in the region between City Creek and Emigration Canyons. Great streams of water issued from the dry hills adjacent to the north bench, and brought rocks as large as a foot in diameter down into the residential portion of Salt Lake City. Gutters were flooded and street car service was paralyzed in the northeastern portion of the city. City Creek Canyon and Red Butte Canyon, both well protected, carried less water than any of the down town gutters. The lesson is very obvious.

Champion Wolf Hunter on Caribou: Adrian Empey, Rider for the Fall Creek Basin allotment, holds our best record as a wolf hunter. During a period of 10 days he killed 13 gray wolves. There are still some of the pack left, and they have been working on both sheep and cattle.--Caribou.

DISTRICT 5 - CALIFORNIA DISTRICT

Winged Letters: A large envelope of official mail, addressed to the Forester at Washington, D. C., left San Francisco by airplane at 5.28 a. m., August 24, and reached New York the following day at 11.17 a. m. It is presumed that it was delivered in Washington that afternoon. This coast to coast record of 26 hours and 49 minutes for 2,680 miles is believed to constitute a record for Forest Service mail delivery.

DISTRICT 5 (Concluded)

Dorts Lose Home in Berkeley Fire: Word from the Berkeley, California, fire of September 18 states that J. C. Dort, Assistant District Engineer of D-5, lost everything in the fire except the clothes he had on at the time. The Dorts had just purchased this new home in Berkeley and had furnished it completely, expecting to make it their permanent home since the completion of the Alaskan Power Report and their reassignment to D-5.

Among those who also lost their homes was Professor Mulford, known to many of the people in the Service.

Redwoods Purchased for Park: The Supervisors of San Mateo County have purchased a 310-acre tract of redwood timber near La Honda, to be preserved as a county park. The purchase price of $70,000 will be raised by a special tax levy. This grove is one of the finest stands of virgin redwood left in San Mateo County.

Ye Editor Tears His Hair: "We have several fingers in the Law Enforcement pie. Last week we got the Ku Klux Klan for a camp fire violation. After an initiation they neglected to properly extinguish their camp fire. One quarter of an acre burned, the organizer of the Klan assumed the responsibility for the fire and paid $50. The Klan patrolled the fire and apparently have assimilated a good lesson."--Sierra.

Ye gods! They kept a peppy item like this, that would have been eaten up by every editor in the country, a dead secret until it was no longer news!!! Oi, oi!

DISTRICT 6 - NORTH PACIFIC DISTRICT

Yes, We Have No Bananas! The Portland Oregonian Radio Service held a harmonica contest during July. Ranger Wiesendanger of the Oregon Forest being something of an artist along that line entered the ring. In the first concert test he played six selections. Each in turn was announced as being played by Forest Ranger Wiesendanger of Eagle Creek with the following titles:

1st selection - "Prevention Forest Fires - It Pays."
2nd " - "Leave a Clean Camp."
3rd " - "Break That Match in Two."

These qualified him for the final heats, during which Albert gave the three following pieces:

4th selection - "If You Leave a Clean Camp and Put Out Your Fire, It will be the End of a Perfect Day."
5th selection - "Clean the Ground Around Your Fire."
6th " - "Be a Woodsman and Never Leave a Fire Burning."

Albert won the medal in the final contest!

Tourist Travel: Chas. D. Sult, who is in charge of the Cooperative Federal and State registration station at Fairholm, Lake Crescent, on the Olympic Forest, reports that up to and including July 29, 11,545 people had been registered. From July 1 to 29, inclusive, 7,069; and up to 6 p. m. July 29, 359 had been registered for the day.

Real Cooperation: The Weather Bureau predicted for D-6 hot, dry winds and consequent low humidity for the period Sept. 6-12. This warning was, of course, relayed to all Forests by the District Forester. On September 12 Assistant District Forester Guthrie found the following insignificant wire to the station agent pasted in the G. N. depot at Oroville, Wash.:

"Spokane, Sept. 6.

Weather Bureau forecasts 3 to 4 days bad fire weather. Roadmaster extinguish all fires. Train and enginemen keep careful watch. If necessary roadmaster should have heavy grades patrolled. (Signed) J.M.Doyle, Supt.,G.N.Ry."

Service Bulletin

U. S. FOREST SERVICE

(Contents Confidential)

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SECRETARY WALLACE WRITES TO CHARLIE WILLIAMS

Readers of the August 27 issue of the SERVICE BULLETIN will remember Supervisor Agee's article about Charlie Williams, the eleven-year-old boy who helped put out a forest fire. Secretary Wallace has written a letter of appreciation to the young fire fighter. Here's the letter:

"My dear Charlie:

I have just been reading a report by Forest Supervisor Agee, in which he tells of how you noticed some smoke in the forest and reported it to the section crew, and how you insisted that they go and look after it. He says that when they finally went to the place where you saw the smoke they found a fire was just getting under way in a fine young forest, and that they arrived just in time to put the fire out. Supervisor Agee says that when he went over the next day you went with him and you found some stumps and fallen trees still smoldering, and that you were a great deal of help to him in covering these smoldering trees so that there would be no danger of the fire breaking out again. He says that this fire was in a very bad place and that if it had not been attended to promptly it would have burned a great deal of valuable timber before it could have been controlled.

"I am writing this letter to thank you on behalf of the Department of Agriculture, which is charged by Uncle Sam with taking care of our forests. By discovering this fire and getting the people to go to it promptly, you have rendered a very real public service, and you are entitled to the thanks of the Government. If I were in your part of the country I would go to some trouble to find you and shake hands with you and tell you this personally. Since I can not do this, I am doing the next best thing, telling it to you by letter.

"I am sending you a few bulletins in which I think you will be interested. I think you will especially like the one on birds.

"Good luck to you, and if you are ever back here come and see me.

Very sincerely,
HENRY C. WALLACE,
Secretary."

MORE FOREST STATISTICS FOR THE FIELD OFFICES

By R. V. Reynolds, Washington

Those who deal with forest statistics will be interested to note that under the agreement concluded September 27 between the Bureau of the Census and the Forest Service the former bureau will undertake to canvass the following subjects as a part of the Census of Manufactures for 1923:

MORE FOREST STATISTICS FOR THE FIELD OFFICES (Concluded)

Production	Consumption	Purchase
Lumber, lath, and shingles	Pulpwood	Railway ties
Wood pulp	Mine timbers	Poles
Cooperage stock	Distillation wood	
	Veneer logs	
	Tanning extract	
	Dyestuffs	
	Excelsior	

This program is much more extensive than anything which has been undertaken in the line of forest statistics since 1911. In connection with the census of fuelwood produced and consumed on farms and the consumption of wood in fencing, which will be carried by the Bureau of Agricultural Economics, these projects cover approximately 94 per cent of the entire wood removed annually from the forests of the United States.

Steps have been taken to provide all the field offices of the Forest Service with the bulletins of the Census on forest products as soon as they are published, the distribution being as follows:

	Each	Total
National Forests	1	154
Western District offices	25	175
Laboratory	25	25
Experiment stations (8)	5	40

Those bulletins arising from the canvass of 1921, namely, the lumber and the pulpwood bulletins, are said to be practically ready for distribution. The tabulations of the 1922 lumber bulletin have been closed.

"EVENTUALLY, WHY NOT NOW?"

(Reprinted from "The Four L Bulletin," September 20, 1923.)

Advertising is now the dominant Art of country, and time has come for both logger and lumberman to get out of fog and blow their horns.

Ginger ale, cough drops, collars, open plumbing, and vegetable compounds are proclaimed from billboards, newspapers, and magazines; smoke writer in sky says "toast your cigaret"; bathing girl on windshield cries "Use More Portland Cement for Building."

Why not start a drive on logs, lumber, and shingles? These commodities are fully as important as oxtail soup and silk stockings. If experts, sloganeers, and bunk artists can put pep into castor-oil and near beer, they can make forest products things of joy forever.

This column is willing to start the ball rolling with a few pert suggestions free of charge:

Why not "Hemlock as You Go?" What's the matter with "The Shingle You Love to Touch?" Or with "My Mamma Uses Douglas Fir?"

Why not have a fat man pointing his finger from signboard with "You Tell the World, Kid, Them Cedar is Fine!"

"Fill Your Old Jimmy Stove with Our He-Man Tamarac," would be jake in the Sat. Eve. Post, and a full-page space in Good Housekeeping could say, "There Ain't No Blisters on our White Pine."

If Art like this is applied to the lumber business the possibilities are unlimited. Think of the sentiment in "Say it With Seattle Sawdust."

By-products of Puget Sound mills could be sold with "Our Teredos, They Float - 99.4 per cent Pure."

Agitate to-day; the lumber industry needs an advertising campaign.

THE WILD HORSE PROBLEM

By Will C. Barnes, Washington

The question of wild horses, most of which are unclaimed by permittees or others, is troubling a large number of our western Supervisors. The Washington office is frequently asked what is being done in the various Districts

THE WILD HORSE PROBLEM (Concluded)

toward solving this problem. The Supervisor of the Wasatch Forest seems to have hit upon a plan which offers a very satisfactory method of getting rid of some of the wild horses infesting his range. He writes as follows:

"All of the permittees and all of the possible owners of horse brands in the vicinity of Vernon Division were persuaded to waive their right to their brand on any horses found on the Vernon Division or vicinity during a certain period of the year. This right was waived to the cattle association. The association levied an assessment of ten cents per head of cattle grazed on this division, and then under the supervision of the ranger employed men to hunt the horses.

"Last year 136 were shot in four days, and this year 53 were shot in the same period.

"Our greatest difficulty was incurred in securing the signature of brand owners. We found they were unwilling to sign until they found that the work would be done under the supervision of the Forest Service and would not be entrusted to the advisory board alone."

While in the West last summer I discussed this question of wild horses with a number of stockmen on the Southwestern Forests. One of them gave me a suggestion which he believed his association would be willing to try out under a plan which he outlined about as follows:

The association would levy an assessment under a special rule which would raise a fair sized fund. Then the stockmen would all throw in with what other help they could secure, round up as many of the wild horses as they could, hold them in pasture until sold under the State law. In the State in question this means advertising the horses for ten days, after which they are sold by the livestock sanitary board at public auction. The association would buy in the horses in all cases where other bids were not made, the animals so purchased by the association to be killed or disposed of in any way that seemed advisable as long as they were not to be turned loose again. In this way the stockman thought they could get rid of some of the wild horses at a very low cost to the association, possibly none at all. The expenses for rounding up and holding would naturally be paid to the association out of the gross proceeds of the sale.

Either of these plans offers a fairly good method for handling the wild horses and are passed along to the Supervisors interested for their information.

SOME OBSERVATIONS ON THE FORESTRY SITUATION

By Austin Cary, Washington

Service men reading the forestry discussions of the day, although these are simmering down into lines much more consistent and harmonious than were characteristic a few years ago, can still get all kinds of impressions. By one writer the office of government is magnified; private initiative, the economic solution, by another. We hear on the one hand that this country is cutting timber several times as fast as it is growing; again, enormous producing power of some regions is cited.

Balance seems to be needed here - recognition of what has been actually done, this given its due weight and the encouragement taken which justly arises from it; but with that men should not kid themselves or one another, however. All really uplifting forces that can be actually got to work are probably none too much to meet the need of the country.

This is prompted by Col. Greeley's "Forest Problem of our United States," in the Service Bulletin for September 24, coming on top of recent experience of a stimulating kind. In that article a late visit to Maine and Massachusetts is referred to. The visit was made in part in company with a group of Southerners, during which I freshened up on the state of affairs in the New England woods, and of feeling among New England people in relation to this interest of theirs. The impression gathered was a very encouraging one, the same that has been gained in previous years, but more so.

The northern pulp and paper industry has perhaps received all the credit to which it is entitled. This item will cover developments in the pine region of central New England.

SOME OBSERVATIONS ON THE FORESTRY SITUATION (Concluded)

With the war, prices for the products of the woods went up to levels unknown before and, except for a short dip, they have not come down again. This, then, is the inference that well-informed men have now drawn; they think present prices more than repay the cost of growing the timber in favorable conditions; in fact, that there is a handsome profit in it. They see clearly that had they foreseen present conditions they could have made themselves wealthy by appropriate measures taken 10, 20, or 40 years ago - acquisition, freeing, planting, etc. Further, being men who act on conviction, many are now going into it.

The most striking example I found was a business man at Winchendon, Mass., who said he looked over this matter 20 years ago and concluded then that timber-growing was a good proposition. That settled in mind, he used his lands well with a view to growth; also, up to date he has planted 2,500 acres. In his own line of manufacture he has little confidence because of multiplying substitutes. His growing timber, however, he feels sure of; timber and water power, in fact, are the two things in which he is ready to invest money. And this assurance of value he has - that the Boston & Maine Railway last spring paid him $5,000 for burning up 49 acres of planted white pine 16 years out, and were very nice about it, too, after they made inquiries.

Several other business concerns have done more or less of the same thing; others still are starting in to do it with enthusiasm and confidence. Further, technical measures - cleanings, thinnings, cutting for reproduction, etc. - are being practiced on something of a scale, purely as a matter of business, because men see that they pay richly. The man who doesn't is simply slow; in time his financial condition is going to show it.

So much to the credit of the economic force referred to at the beginning. Some of us are and have been inclined to think this will be the major one as we build up forest production. Yet public action is in evidence in the region, too. The developments mentioned above doubtless would not be in evidence to-day unless fire protection had preceded. Then one State, Massachusetts, as is well-known, is moving strongly for acquisition of public forests. The state of regulatory legislation may be mentioned, too. It is not absent, but plays a small part as yet. Those States, as wide-awake and progressive as any, are going cautiously with it, only as they see their way clearly. Whether or not they are wise in this is, of course, a matter that might be debated.

WOOD PULP FROM CANADA

Canada has just fired a shot that may expedite the utilization of American cut-over waste lands on forestry lines. The authorized embargo on the exportation of pulpwood from Canada, even that grown on private lands, has thrown eastern paper manufacturers into a panic. The Alaskan forests are capable of supplying pulp for one-third of all the newsprint paper now used in the United States whilst maintaining the integrity of the forests....What kind of a rotten national housekeeper Uncle Sam has been in the past - and I'm not saying that he could possibly have been any better - is illustrated by this pulpwood humiliation. Although we have 81,000,000 acres of denuded lands, and about 200,000,000 neglected acres that are regrowing trees in a more or less shabby way, we have to go begging to Canada for pulpwood for our papers and magazines....This and the next generation have as big, as necessary and as romantic a job in restoring the American forest of our forefathers as the last two had in destroying it.--Sunset Magazine.

ANOTHER FRUIT STAND DITTY ENTITLED
Yes, We Have No Statistics
(Affectionately dedicated to the Branch of Research)

Yes, we have no statistics!
We have no statistics to-day;
We have theories and guesses
That lead on to messes
Which turn all our hairs to gray.
We have some bum calculations,
And some good hallucinations;
But yes, we have no statistics,
We have no statistics to-day!---M.H.

WASHINGTON NOTES

Distinguished British Forester Entertained by Society of American Foresters: General Lord Lovat of England was the guest of the Washington Section of the Society of American Foresters at a dinner given at the Cosmos Club in Washington on September 28. General Lovat was in general command of the British and American forestry troops in France during the war and is a friend of Col. Greeley. During his stay in Washington General Lovat called on Secretary Wallace, who presented him to President Coolidge.

At the dinner given in his honor General Lovat paid a generous tribute to Col. Greeley and the men and officers of the American forestry troops. The whole job of securing timber in France, the General stated, was a splendid illustration of close cooperation by two English-speaking peoples.

"The sacrifice of fully 65 per cent of our growing timber in England," he said, "in order to furnish the necessary lumber for defensive purposes taught the people of England a lesson they will never forget. In addition to reforesting the land so cut over we have started in on a program of purchasing lands for reforestation purposes which will, we hope, give us not less than 500,000 acres of nationally-owned timber, a small area compared to the huge forests you have here in America, but still a reasonable acreage based upon our whole area."

Because of the breaking up of many large estates, General Lovat said the British forestry commission has been able to purchase these lands at prices far below their value before the war. Lord Lovat also mentioned the recent conference of representative foresters from each of the political divisions of the British Empire, through which he felt the needs of the Empire as a whole would be safeguarded in the future through close cooperation with all the British colonies.

David G. White Joins Hardwood Manufacturers' Institute: David G. White, for ten years a member of the Service, seven of which were spent in research work at the Laboratory, has been appointed as Forest Economist of the Hardwood Manufacturers' Institute. This organization plans to carry forward additional constructive work dealing with the economics of the lumber industry and a national forest policy, especially relating to reforestation, forest protection, and the application of the correct principles of forest taxation.

FOREST EXPERIMENT STATIONS

A Good Booklet to Read: All members of the Forest Service who are interested in sheep or who are interested in securing western yellow pine reproduction should secure a copy of Department Bulletin 1105, "The Natural Reproduction of Western Yellow Pine in the Southwest," by G. A. Pearson. In this are given the results of numerous studies carried on at the Fort Valley Forest Experiment Station during the past ten years. Mr. Pearson shows that one of the principal reasons why yellow pine reproduction is not found throughout the Coconino plateau is the excessive damage both to the new germination and the established seedlings by sheep.

It is quite possible that many ranger districts have severe grazing damage, but, because the damage is not recognized, no damage from grazing is reported. The plates in the bulletin will help you to recognize this injury when you see it.

Fire! Those who are interested in the relation of fire to weather conditions should read two articles in the Monthly Weather Review for April. One of them, by E. F. McCarthy of the Appalachian Forest Experiment Station, shows how the data collected regularly by the Weather Bureau can be used in connection with the study of fires. The other article is by S. B. Show and E. I. Kotok of District 5, who have completed a study of lightning storms and fire. Lightning zones for the Forests of California are shown on a map, and the area covered by some typical storms shows how closely lightning storms follow definite paths. Both of these papers have been reprinted as separates and are available for those who desire them. The District Librarians have copies of them if the Supervisors do not.

DISTRICT 1 - NORTHERN DISTRICT

Why Is a Guard? Endowed with a little authority and much responsibility, he stands or falls low in the scale of titles. His authority is absorbed by association with those who have a surplus and is seldom exercised; his responsibility is shared by others when redeemed; when not redeemed he is the reason. Hired to-day and "fired" tomorrow, he is termed a temporary appointee whose promotion would be a miracle and whose demotion is an impossibility. As a chinking to plug the cracks in an emergency organization, he is indispensable. As a cigarette artist and planning architect he is a dud.

The first Guard was a young Irishman. Captured in the wilds of the Lewis & Clark Forest Reserve, he was shanghaied into a job without examination or appointment. Equipped with a brogue surpassed only by his brawn, he had a keen intellect that grasped directions as given. There have been many Guards since Pat but none better. His job was on a two-mile fire line, to the north of which was a timbered Forest - to the south of it a raging August fire. The Forest and the fire joined except for the fire line between them.

Pat's directions were "Hold that fire off the Forest till it rains." In three weeks it rained - the line had become a much used trail on the north side of which there was much evidence of Pat on the job where fire had crept beneath the turf and come to the surface on the wrong side. Pat, the Guard, was fired and forgotten; the fire to the south of his line had swept southward for miles unchecked by a crew of "fire-fighters."

When the ground had cooled and the smoke cleared away, three wise men came out of the East with soft hands and a camera. The burned area was inspected, photographed and reported until it became the wise men's fire. There was nothing to report on Pat's side of the line since nothing had been changed.

Thus the real human element in the case seemed lost in the shuffle and there were no pictures of "a Guard on the job," or of Pat's Paul Revere trips for supplies while running his own commissary or the isolation of camping on the job till it rained.

The First Guard made good. May he and his kind be ever with us.--

J. B. Seely.

Blister Rust Control at Experiment Station: An experimental Ribes eradication project has just been completed at the Priest River Experiment Station embracing nearly 2,000 acres or practically one-half the area of the experimental forest. The work was done by the Office of Blister Rust Control with a crew of 20 men. One of the objects was to determine the cost and efficacy of eradication measures for the western white pine type of northern Idaho.. Ribes lacustre, Ribes viscosissimum and Grossularia Inermis were the chief species of currants and gooseberries encountered. White pine blister rust now occurs only 100 miles north of the Idaho boundary, and forest officers who recently visited British Columbia state that there is every chance of the blister rust appearing in Idaho within the next five years.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Sportsmen to Cooperate with State Game Department: Governor Sweet of Colorado, in cooperation with the State Game and Fish Commission, has called a conference of representative sportsmen of the State for October 11. Invitations to the conference and a dinner will be issued by the Governor. The purpose of the conference will be to discuss the fishing conditions and needs of Colorado and will probably result in the appointment of an advisory board of sportsmen which will concur with the Game Department regularly on matters relating to the fishing resources and needs. The Forest Service and the State Game and Fish Protective Association have been assembling some valuable material for presentation to this meeting.

Special Posters for Hunting Season: The District Office in cooperation with the Colorado Game & Fish Protective Association has got out a very attractive poster headed "Good Hunting," calling attention to how it is destroyed by carelessness with fire and by poor sportsmanship. The poster also calls attention to the open season on deer and special provisions of the law. The cost of the posters was paid by the Game and Fish Protective Association and the Forest Service is seeing that the bulk of them are posted at garages, hardware stores, and other places frequented by hunters.

DISTRICT 2 (Concluded)

For the Second Time This Season the Shoshone National Forest is suffering from severe rains and much damage to roads, particularly our new South Fork minor project. A ranger station was washed away in July and on September 27 the North Fork road to the Yellowstone Park was blocked by boulders and landslides and the Supervisor marooned at Wapiti Lodge.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Auto Won't Follow Road While Driver Greets Girls: D. O. man has experience that proves a pilot needs both eyes in down grade travel. Descending Las Huertas Canyon on the Manzano recently after viewing a road location the District Engineer met some lady acquaintances on their way up to Ellis Ranch. During the bowing and courtesying the Government Dodge slipped over the bank, whereupon the entire assemblage spent the next two hours getting the vehicle back into the road. No damage was done to car or driver.

Carried Out Objective After Leaving Service: Mr. William R. Warner, former Deputy Supervisor on the Gila, resigned from the Service early this spring. Among the 1923 objectives which had been assigned to Warner were instructions and lectures on forestry among Boy Scout organizations. The Gila Bulletin says that Warner is carrying out this part of his program even though engaged in an entirely different line of work.

D-3 Has Had Them All the Time: "Who," shouts the Sitgreaves Bulletin, "said a broken Statutory Ranger is something new?"

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Who Says Planting Doesn't Pay? When we used to do planting we were pretty skeptical about the returns that would be received when it became time to sell our timber. Supervisor Parkinson is trying to engineer the first timber sale of planted trees in this District and is expecting to get about $3,000 per thousand stumpage. This is a fair enough return for anybody. It might be mentioned in passing, however, that the trees are about the size of a lead pencil, and are to be sold to a nursery company for ornamental purposes; these trees being part of the stock of trees left on the ground when the Cottonwood Nursery was abandoned.--F.S.B.

Floods: At the time of the destructive floods on August 13 at Willard and Farmington, smaller floods took place down on the Manti, one in particular going down through Ephraim. The heavy rainfall hit upon the top where the erosion areas are located, which are studied intensively by the Experiment Station men. From 1916-19 when both erosion areas were equally grazed the run-off on area A averaged 7.35 times that on area B (because A is steeper and more deeply gullied). But this year in this storm the run-off on A was only 2.38 times that of B. In 1916-19, area A had a .12 density of forage; now it has .35 - this and this alone has made the difference. There used to be nearly 9 times as much sediment washed from A as from B. On August 13 of this year only 3½ times as much came down. Boost watershed protection on the high range - it works.

The Weather: Rains late in September make it look like the end of the fire season and pretty near the close of the field season as well, and we expect to see grazing men and surveyors piling into the office pretty quick. We hope that everybody can look back over the summer season and see that they have accomplished something worth while. The next job is to write about it all, so while it is storming get out the oil can and start lubricating the joints of the old Oliver.

DISTRICT 5 - CALIFORNIA DISTRICT

Giving the Bugs the Air: Entomologists have for some time been interested in determining whether or not tree-killing beetles could be completely eliminated from limited forest areas. It has been difficult to locate limited, isolated areas where extermination could be undertaken without excessive cost. In 1918 three small stands of pine on the Santa Barbara were discovered by Entomologist Hopping which seemed to present ideal conditions for this work. These stands are known as the East Pinery, Figueroa and Zaca units. Within these areas 35 trees were killed by bugs in 1918, 34 in 1919, 23 in 1920, and 79 in 1921. During February, 1922, entomological rangers treated all infested trees that could be found, a total of 65. In February, 1923, another clean-up was made, at which time only 13 trees could be discovered. Entomologist Miller has just completed a check of the area and finds that the western pine beetle has been practically exterminated in the East Pinery. Two infested windfalls were found on the Figueroa unit and one 10" standing infested tree on the Zaca unit. Ranger Libeu is now inspecting the area every two or three weeks in connection with fire patrol to locate any infested trees that may show up. Two hundred dollars has been allotted by the Forest Service to employ labor for treating trees, and by a year from now the entire area should be free from beetles. The timber is of value from a recreational standpoint, and the extermination of the beetles within the area gives opportunity to discover the length of flight of these bugs, since the nearest stand from which the area could be reinfested is several miles away.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Ranger Elected School Director: In a recent election held at Skykomish on the Snoqualmie Forest, the entire school district elected Ranger G. E. Sawyer, school director for a three years' term.--F.B.K.

Death Trap: While riding over a portion of the range on the Cougar Creek C & H allotment, I was attracted by the stench of some dead animal. Upon investigation, I was led to an old deserted cabin upon some private land within the allotment. When I opened the door of the cabin, I found seven head of dead cattle and one still alive. There had been a few sacks of salt stored in the cabin; the door had been shoved open by the stock and the cattle crowded in to get the salt. While crowding around in the cabin, they shoved the door shut, thereby trapping themselves.

Upon securing approval from the owner, the cabin was burned, doing away with both the dead carcasses and the death trap. This is another loss of life caused by doors opening to the inside.--R.H.H., Whitman.

DISTRICT 7 - EASTERN DISTRICT

Examine Tracts of Lumber Companies: Forest Examiner C. E. Beaumont, Unaka, and party have completed the examination of the N. B. McCarty and The Carolina Lumber Company tracts in Tennessee and North Carolina, and are now making an examination of the A. D. Reynolds tracts.

Forest Examiner A. C. Shaw and Examiner of Surveys, C. F. Muzzey, left this week for Lynchburg, Virginia, where they have been detailed for a six weeks' stay on the Natural Bridge Forest.

Round-up Ends with Barbecue: The annual ten-day round-up on the Wichita Forest closed September 10 with a barbecue furnished by the cattlemen for their families and friends. Two hundred and fifty were in attendance.

Service Bulletin
U.S. FOREST SERVICE
(Contents Confidential)

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REVERIES OF A RECLASSIFIER

By C. M. Granger, D-2
(Detailed to Personnel Classification Board)

Down under the shadow of the Lincoln memorial in a temporary building erected during war time a battle is still going on - the battle with the questionnaires. They must have thought those of us who are detailed to the "P.C.B." - Personnel Classification Board - are tough guys, for they put us in the last house on a tough street. The first house is the Navy Department, the next the War Department, and then the P.C.B. Since reclassification rumors have not lately been seen as frequently in print, as usual it has occurred to me that a little news of the fracas might be welcome.

Since early in July about 125 of us have been trying to whip 120,000 questionnaires. We finally won the first round and buried the papers, but we're not the men we were. Nor is the war over, for they keep sneaking up on us from time to time, and one can never tell when a lot of recruits will come drifting in to upset the works.

We - the sixty-five or thereabouts classifiers (the rest are clerks) - have taken the questionnaires and divided 'em up into classes of occupations, such as file clerks, fish culturists, dam tenders, card punchers, pigeon experts, forest rangers and so on, ad infinitum. Then we split each class into series, such as senior file clerk, junior file clerk, etc. Then we set about to write a description of the duties and responsibilities of each series. It was right there that I found out how little I knew and how little a lot of other people knew about describing their own jobs or those of people with whose tasks they ought to be thoroughly familiar. Some of the job descriptions on the questionnaires were marvels of words without meaning. Some people took a page and a half to describe a job that others adequately pictured in a paragraph. One weary doctor described his own job briefly thus "Far too much"!

Well, we finally built a set of job descriptions for every class of occupation in the field service and there are between 1,500 and 2,000 separate classes or series within classes. We found some queer jobs, too. One man goes about a Texas town putting minnows in rain barrels to eat up the yellow fever mosquitoes. Another trains pigeons for army flying. One woman in Switzerland counts stitches in embroidery for the Treasury Department so they may classify it for import valuation. There are tea tasters too, and alert persons who have to stand on the international bridge at El Paso and scrutinize incoming Mexicans for cooties!

After we got our class descriptions all fixed up the P.C.B. fixed tentative salary grades for each, rushed a sample lot through the Printing Office and now the Departments and Bureaus here are busy trying to allocate each Tom, Dick, Harry, and Harriet to his or her proper class so an estimate can be made of the total cost of reclassification which the Budget Bureau can turn over to Congress. Later the work will be polished up, allocations reviewed, and a final report made to Congress in December.

It has been a mad rush against time, but withal I have been astonished at the uniformity in the work of the sixty-five classifiers in their class descriptions. I believe there will be a fitting description for the job of every one of Uncle Sam's 120,000 field workers when the last "copy" goes over to the Printing Office in November.

What about salaries? That's the question all are asking. Nobody knows yet because Congress has to act, but judging by final allocations in the Washington offices a very fair salary readjustment is going to result.

I say "readjustment" rather than "raise" for this reason: I have heard individuals say, "Well, my allocation doesn't get me any raise." There seems to be a somewhat general impression that reclassification means a raise for everybody. That isn't true. This movement is designed to be a real analysis of the Government service in order to find out just what classes of employment there are, what differences exist in pay rates for the same job, what a class of work is worth, and an effort is being made to reward all work equitably and like work in like amount, with perhaps a differential here and there in favor of expensive or undesirable living places like Alaska, or Guam, or China. For the great bulk of workers it will mean a decent raise, particularly for those who have been unfairly held down by the statutory roll. For some who have been blessed with more or less regular and generous promotions on the miscellaneous roll, or who have benefited by receiving the higher paid statutory places, the immediate raise may be slight or nothing. For the Forest Service, if the allocations for which the Forester is working go through, there will be a salary readjustment that will at least give the boys something to buy sixteen-cent gasoline without giving up chicken on Sundays. One of the very best things about it all is the practical assurance of doing away with everything like a deadly statutory roll, and the provision for promotion opportunities within grades without waiting for some brother or sister worker to eat a toadstool by mistake and pass on.

GRAZING VS. TIMBER SALE ADMINISTRATION

By J. F. Conner, Harney

Mr. E. L. Perry, in his "Plea in Abatement of the Kid-Glove Policy" which appeared in the September 4 issue of the Service Bulletin, gave us much food for thought.

The "hay-wire" sawmill outfit must comply with the same exacting contract conditions as the large outfit, and if he goes on the "rocks" nobody worries. In fact, many of us have predicted that he could make no money, but still he buys on. He pays for the stuff before he gets it, so we are always sure of our money. He piles his brush because we don't scale his logs until it is piled. The Ranger is vested with sufficient authority to handle timber sale administration on the ground. Why can't he have equal authority in the administration of grazing?

The regulations require that an applicant secure a permit before placing stock on the Forest. The permit is not issued until payment is made, but in the meantime the stock graze on the Forest. If the permittee "blows up" during the season and turns his stock over to his creditors, the Forest Service holds the sack, but if the permittee continues in business we generally get our money within a year or two. About the only recourse the Supervisor has is to write letters requesting payment, "dun" the delinquent when he meets him, and finally refer the case to the District Forester and let his office write some more letters. The result has been that permittees are beginning to regard our letters as a matter of form and not anything that should cause them any concern. If we started propping up the sawmill outfits the way we are trying to bolster up grazing permittees, they would soon find their legs too weak to stand on, and imagine what our sales administration would be like with a lot of propped up operators. Why should not the grazing permittees get the same treatment? Let them pay for the grass before the stock eat it and give the local office sufficient authority to enforce requirements on the ground.

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Lumbering is the third largest industry in the country, employing 839,000 wage earners and carrying capital investment of more than three billion dollars.

REALIZATION OF FIRE DAMAGE AND PERSONAL PRIDE IN FOREST NECESSARY TO PREVENT FIRES

By H. N. Wheeler, D-2

Fire prevention, recognized as the first step in forestry, can only be brought about by a realization on the part of our citizens that fire is really damaging. The farmer in clearing land is under the misconception that fire is a benefit to him - but it actually causes serious loss. Broadcast burning of land to be put under cultivation removes only such debris as could be plowed under or removed easily by other methods, while it does destroy the humus needed as fertilizer and impoverishes the soil which otherwise might be productive.

A Baudette, Minn., newspaper, about September 6, was elated over the fact that because of dry weather more than 5,000 acres were recently burned over and that one 80-acre tract was so cleanly burned that it could be plowed. Obviously, there were no stumps on the land or this broad statement could not be made.

Throughout all of northern Minnesota there are thousands of acres of so-called waste land and even foresters refer to them as waste. Most of this land is waste only in so far as agriculture is concerned, for young timber is coming up in abundance. Some of it is so small as to pass unnoticed, but more of it with young, fine trees showing above the brush.

Laws against starting fires help, but education of the people that fires are harmful and do no one any good is much more effective. Some counties already admit they made a mistake in cutting timber along the lake shores, for tourists do not care to go to barren lake shores and the tourist industry is increasing amazingly in the former forested areas in northern Minnesota. It is further admitted, reluctantly by some, that lake and swamp drainage has not been beneficial. If not beneficial, then it has been detrimental.

A Norwegian farmer near Cass Lake, Minn., says he receives a greater cash return from the wood products of his 160-acre farm than from 40 acres of cleared and highly cultivated tract. He is handling his wooded area of Jack pine as forests in Norway are handled and expects to have timber to sell every year. Other farmers in that locality admit that about all the cash they have had for living expenses the past two years came from the sale of wood products.

If we can convince the people that fire destroys the tourist business, destroys the future production of timber, and, further, that all fire reduces the value of the soil for farming purposes we will soon have no fires. Those who enjoy the beautiful outdoors and the lovers of wild life are convinced of the necessity of preventing fires, but many of them are still very careless in the use of fire. And it is difficult to secure the help of persons to prevent something they believe does them no harm or actually benefits them, even though it may be harmful in general.

If a big fire were raging in Yellowstone, or one of the other well known National Parks, great consternation would be expressed in all the papers and the citizens as a whole would deplore it. When the local people take pride in the National Forest they have learned to love, then they will take a keen and active interest in any harm that may come to that Forest and their interest will spread to other National Forests.

The name of each individual Forest is a power in stirring up this local pride. In a few Forests the name is so well known that it is in everyone's mind and the people are proud of the fact that they have the Forest near them. They use the name of that particular Forest in their advertising on all possible occasions. In such cases the people are much more solicitous of the welfare of the Forest and can be depended upon to help in every possible manner to protect it. Such love and regard may be likened to the pride taken in some prominent building of the city or nation.

It is up to us to arouse this personal pride in each Forest. The first step is to acquaint the public with what the Forest means to the local community. It is not enough that the comparatively few users, such as stock raisers and lumbermen, realize the value to them, but it is necessary that the whole public have a conception of it. That means the man in the street, the housewife, and, above all, the school children must have a conception of it. Just stating that so many million acres of timberland are burned over each year and that our supply of timber is rapidly going is valuable in a general way but will not prevent fires.

WHAT IS A "BURN?"

By Frank J. Jefferson, Selway

Doubtless every reader of the Bulletin has heard the terms "'89 Burn," "1910 Burn," "'19 Burn," etc., repeated many times, and very likely has frequently used them. What do they mean? What sort of mental image do they create? Do these terms develop anything like a true concept of conditions on the areas referred to?

The indiscriminate use of such terms without question develops inaccurate ideas of conditions. To the average man a "burn" is a "burn" forever. He doesn't appreciate that the "burn" has probably restocked and is now a thrifty stand of young timber; neither is there anything in our statement to open his eyes to this fact. Is it any wonder that the view is held in some quarters that many National Forests are practically devoid of a timber stand? So long as we are handling Forest lands why don't we use terms which describe some definite forest condition and which mean something to the people we talk to? When a burned-over tract commences to restock why continue to damn it by calling it a "burn?"

Investigations on the Clearwater Forest indicate that approximately 60% of its recent burns have restocked. Possibly 70% of similar burns on the Selway have restocked. Practically every mature stand of timber in District One occupies land which was at one time burned over. What difference is there between any of these restocked areas except the age of the stand? To be consistent we should describe a 150-year-old stand as "the 1770 burn," etc.

We should have usage in this respect which accurately describes and which will create on a Forest true knowledge of age classes on various units. We should have usage which creates an impression with the public that our Forests contain something more than mature trees and barren wastes. Let's quit using the all inclusive term "burn" and start talking about our "1890," "1912" and "1920" "reproduction."

STATES PLANTING TREES ALONG HIGHWAYS

The Forestry Department of Minnesota is planting 30,000 trees along the highways. In Indiana the State Forester has recently placed about $2,000,000 worth of walnut and hickory trees in the odd places along the highways.

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During the last five years forest fires have swept about 56,000,000 acres of wooded lands. These devastating fires are one reason for the greatly increased cost of timber and its products. The majority of forest fires are caused by carelessness and are therefore preventable.

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Revenues from the National Forests during the fiscal year ending June 30, 1923, totaled $5,335,818. Most of the money received came from sales of matured timber and from sales of grazing permits.

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The E. I. du Pont de Nemours & Company, Inc., has recently published a book "Principles and Practices of Upkeep Painting." This book appears to be very complete and thorough, and can be secured free from the company's office at Wilmington, Delaware.

WASHINGTON NOTES

New Arrivals in Forest Tree Book Family: "Forest Trees of South Carolina" and "Forest Trees of Kentucky" are the youngest members of the forest tree guide book family to appear. Each booklet contains descriptions of 70 species of forest trees, each illustrated with a cut. Several of the species described have not appeared in the sister books issued during 1923 by the States of Maryland, Delaware, Virginia, North Carolina, Tennessee, and the District of Columbia.

These books represent an interest in forest trees by a wide variety of public organizations, including the State Department of Education of Delaware, the State Department of Agriculture of Kentucky, the Division of Cooperative Agricultural Extension, College of Agriculture of South Carolina, the American Forestry Association, and the State Forestry Departments of Maryland, Virginia, North Carolina, and Tennessee. The public schools of Tennessee, North Carolina, Maryland, and Delaware have been provided with copies of their respective State booklets for use of the school children.

Forest Examiner W. R. Mattoon of the Washington office was the cooperator for the Forest Service in the preparation of these State pamphlets. The publication of the booklets is due largely to the efforts of Mr. Mattoon. Most of the cuts illustrating the booklets are from original drawings by Mrs. A. E. Hoyle of the Washington office.

A Boost for "Lumber Cut" Bulletin

STEELE & HIBBARD LUMBER CO.
Hardwood Lumber
3300 North Hall & Buchanan Streets,
St. Louis.

September 29, 1923.

Mr. W. B. Greeley, Chief Forest Service,
U. S. Department of Agriculture,
Washington, D. C.

Dear Sir:

I have received through the mail Bulletin 1119, subject "Lumber Cut of the United States, 1870 to 1920." I have read this pamphlet with a great deal of interest and wish to compliment Messrs. Reynolds and Pierson, the authors of this valuable information.

I have never seen a Government Publication that was so well made up and gives one so good a view of lumber operations in our country from every possible angle. The written matter calling attention to decline of lumber production and its effect on consumption and on prices is wonderful and this information should be distributed and in the hands of most men connected with the lumber industry as well as the members of Congress.

If any more pamphlets are issued on this subject by these Gentlemen of the Forest Service I shall consider it a great favor if you send me same to this address.

Yours truly,

Roland F. Krebs, Vice-President.

Oh, You Field Naturalists! In Dr. Nelson's memorandum to the Forester containing suggestions for the management of the Kaibab Game Refuge in the Kaibab National Forest, he states - "When funds are available, the Biological Survey will detail a game expert to assist in the study of the deer on the Kaibab but observations made by the rangers day by day through the year, if properly diredted, will give a mass of valuable information."

We need more information about the destruction by sheep of the nests of sage chickens, grouse, and ptarmigan. Won't the Rangers get busy?

FOREST PRODUCTS LABORATORY

Turpentined Pine Samples from France: Eight cross sections of the trunks of French maritime pine trees, which had been turpentined, were recently received at the Laboratory. These wood sections were obtained through our State Department from the Mayor of Ychoux, a town in the heart of the maritime pine district of the famous Landes in France.

The cross sections are taken from trees 80 to 85 years old and show the efficiency of the French methods of turpentining which surpass those in practice here. The grown over scars show that turpentining began when the tree was approximately 40 years old and was continued during a period of approximately 45 years when the tree was cut at a diameter of possibly 20 inches. A study of these discs is being made in connection with the Forest Service research on turpentining methods in the South.

Fire Gains Fire Extinguisher Notice for Laboratory: The Laboratory also had to break into print about the use of the chemical fire extinguisher. At three o'clock one morning last week, a fire started at a destructive distillation retort in the main building. Fortunately, the fire was heard by the night watchman, who soon placed it under control with fire extinguishers. Approximately $50 worth of damage was done. This is no argument, pro or con, on the chemical fire extinguisher discussion.

For Wandering Forest Officers Also: Peripatetic forest officers should be interested in the suggestions recently made by the Laboratory concerning the packing of household goods for the U. S. Army. These suggestions included changes in a memorandum prepared by the Army for the use of officers in the boxing and crating of household effects.

FOREST EXPERIMENT STATIONS

Forest Measurements: As we told you in the Service Bulletin of September 10, you will find forest experiment stations ramifying everywhere. One of our offshoots that is certainly a husky looking youngster has the key initials of RM and answers to the roll when Forest Measurements is called. Imagine, if you can, a room or two with a lone man surrounded by eight other workers (not men) busily engaged in punching the faces of numerous devices that click and clatter and eat up paper by the roll, desks covered with tables of growth, of yield, of prices, of supplies of this and that. Such is the section commonly known as Computing, and to this section falls the task of working up much of the field data on tree volume and growth taken at the forest experiment stations, and making such other calculations as are necessary not alone for Research but also for other Branches of the Service.

An analysis of the projects handled in the Section for the past six months shows the diversified character of the work. About 25 per cent of the time has been devoted to a study of growth and yield of the southern pines as a basis for forest management in the Southern States, the field data being gathered by the Southern Forest Experiment Station in cooperation with the forestry section of the National Research Council and several State forest departments. Nine per cent of the time was devoted to the study of southern white cedar for the Appalachian Forest Experiment Station last spring. Seventeen per cent of the time of this section, in the six months' period, has been spent in the compilation of retail lumber prices for the Office of Forest Economics. This study, begun last year to secure data for the "Timber Crop Report," has proved to be much larger than was expected at the time of its initiation.

Other work which the Section has handled included the Alaskan Water Power Survey, for Engineering; an analysis of the cost accounting system for Operation; the compilation of taxation data; checking the areas, volumes, and prices for Land Acquisition; and the tallying of the Lumber Census.

One other activity should be mentioned, which occupies 11 per cent of the time, is the maintenance of the Forest Service Statistical Atlas, which is the authentic and complete current inventory of the activities of the whole Service capable of measurement, including fences, cabins, salt logs, bridges, lookouts, and many other things.

DISTRICT 1 - NORTHERN DISTRICT

The Old Order Passeth: A movement is on foot to break up the large ranches in the Big Hole Basin. Colonizing with dairymen is being advocated by a committee of big ranch owners.

On February 18th the Ranger on the Beaverhead was called on to furnish information to this committee on forest policies affecting this colonization scheme. The committee was informed on free use privileges, S-22 sales policy and grazing policies affecting new beginners. After these subjects had been gone into quite fully, possible road development was discussed. Present school facilities and possibility of centralization of schools through improvement of existing and construction of new roads was given considerable attention. The colonization committee strongly advocates the improvement of the Wisdom to Gibbonsville Road, as this road will permit handling of food supplies raised in the Salmon Valley. The importance of the Park to Park Road through the Big Hole Basin will be featured in advertisements issued by the committee.

If this colonization plan is carried through successfully, it probably means the passing to a large extent of the production of beef in the Big Hole Valley. Plans contemplate the disposal of meadow lands in tracts of forty acre, eighty acre and larger units.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Decline in Cattle Industry: Cattlemen who are shipping to market at this time complain they are "giving their product away" and a number are stating that it is useless to try and go any longer on cattle. They are making inquiry and urgent requests to have cattle ranges converted to sheep ranges at least for the time being. The plan is to buy old ewes and feed them on the products of the ranch this winter and after running them one season on the summer range to dispose of the entire bunch, including the lambs, in the fall. This offers a means of quick returns which seems to be the main necessity of the cattlemen at this time.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Man Who is Fined Praises Ranger that Did It: Meager details of a fire story from a New Mexico forest indicate that the public admires the performance of clear-cut duty. It seems that a fireman from a small city outside the forest while on a trip within the forest either left his camp fire unextinguished or allowed it to escape. He had been a friend of the Ranger for many years, but the Ranger handled the case in the usual way which resulted in a fine. Not only has the fireman commended the Ranger for doing his duty, but he has openly spoken words of praise concerning him and thanked him for the lesson he received. The fire captain's superior, the fire department chief, has written the Ranger a fine letter approving the outcome of things in which he states the action will make his captain a more valuable man in his department. In acknowledging the chief's letter Ranger________ assures him that it is not easy to proceed against a man one has known for more than twenty years, but he wants them to remember the ranger station latch string still hangs on the outside and urges both the chief and the captain when passing that way to call in and see him.

DISTRICT 5 - CALIFORNIA DISTRICT

Air Service Aids Fight Against Blister Rust: The air service of the Army and the Department of Agriculture are cooperating in efforts to stop the inroads of the white pine blister rust, which has found its way into the forests of British Columbia and Washington and is now traveling southward. Col. Gilmore, air officer of the Ninth Corps Area, recently received a communication from Dr. E. P. Meincke, thanking him for having assigned Lieut. J. W. Benton of Crissy Field and a De Haviland observation plane to take Ellsworth Bethel, pathologist of the B.P.I., on a flight over the forest area of the Northwest. This action enabled the Government to make in four hours a survey which would otherwise have taken several weeks, and could not have been made with such thoroughness by any other means of transportation. Dr. Meinecke states that the blister rust, if not stopped, will reach the sugar pine areas of California and cause disastrous havoc. The efforts of the Department are directed to finding a line extending across the mountains which can be used as a basis for an artificial barrier against the progress of the disease, by means of eradicating currants and gooseberries along this line, perhaps aided here and there by cutting down pines.

The disease, which constitutes a veritable scourge of the white pine forests of the East and the Northwest, is a native of the Ural Mountains. Over a hundred years ago Europeans, who are always alert in seeking new kinds of tree and plant life, established large plantations of white pine trees from eastern North America, which are now largely ruined.

What is This the Height of? When a man who has had a season's experience as Forest Guard in another District goes off and leaves his camp fire burning - what is the answer? Yet this is just what happened on the Tahoe recently. Possibly the memory of the $50 fine that he paid will linger longer than did the teaching and training of his Forest Service experience.

Research Problem: Q. What made all the smoke at the Lytle Creek fire on the Angeles? A. 256 cans Prince Albert and Tuxedo, 12 sacks Durham and 6 cans English Curve Cut.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Good Cooperation: At the suggestion of the Cascade Forest, the District Office took up with the District Manager of the Standard Oil Company in Portland the privilege of having posted in their filling stations at all Supervisors' headquarters in Oregon copies of the new Camp Fire Permit Cards. Mr. W. L. Muncy, the manager, very kindly agreed and asked that sufficient copies (68 in number) be sent him to be given to all their branch stations with the understanding that these cards would not be necessarily kept up after October 1.

Why is a Fire Extinguisher? Excerpt from a Ranger's diary: Sunday, June 3, 1923. While at dinner the house was discovered to be on fire and with the assistance of Mr. V. and son, we soon put it out. The fire extinguisher, according to the dates recorded, had not been changed for four years and refused to operate. The fire was evidently caused by a defective flue, as the terra cotta is cracked the entire length of the joist where it goes through the roof. Put in the afternoon repairing the roof."

And after all that has been said about careless campers - !--A.O.W.

"Relative Humidity and Forest Fires": This is the title of a 16-page pamphlet by Dr. Hofmann and W. B. Osborne, Jr., issued in July and printed locally in cooperation with the Western Forestry and Conservation Association. An edition of 2,000 copies was printed and copies have been supplied to a large number of lumbermen and fire associations and to forest officers.

He Will, All Right: A. C. Lux of Seattle, while on the Sauk River R. R., threw a lighted cigarette into the brush. Unfortunately, there were two Snoqualmie Forest officers on the train who saw him do it. Mr. Lux admitted his guilt, paid $12.75 for his thoughtlessness, and wrote to the J. P. at Darrington: "Hereafter I will be more careful and also will caution my friends and help reduce the fire hazard in our forests."

PR in the Field: The following is from a Fremont Ranger's diary: "Picked up Rev. Lewis at Bly and arrived at Lakeview 12:45. Rev. Lewis offered to pay for ride, but I told him to advocate fire prevention and forest conservation from the pulpit and we would be square. He agreed to do so."

Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

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BRITISH FORESTER VISITS CALIFORNIA

By Paul G. Redington, District 5

I had the great pleasure of a 4 days' trip recently with R. L. Robinson, the technical member of the British Forestry Commission, with headquarters at London, England. The British Forestry Commission was created by Act of Parliament 4 years ago. There are eight members of the Commission; two of them are paid, namely, the Chairman, Major General Lord Lovat of Invernessshire, Scotland, (I had the honor of meeting with him at Seattle recently when Col. Greeley and he forgathered for the first time since their association in France in 1918) and Mr. Robinson. An original authorization of 3½ million pounds sterling - approximately $15,000,000 was voted the Commission to expend over a period of 10 years for acquisition of forest land and reforestation work. As I understand it, the Commission cannot definitely count on the total amount but must work under such annual portions of the total as the country's financial condition will permit the Government to budget.

The Commission is authorized to use the receipts which come in from the sale of forest products, and this revenue amounts to about $125,000 annually. Approximately 150,000 acres of land have been acquired by the Commission at an average of $12 per acre. Twenty-eight thousand acres have been planted at a cost of approximately $40 per acre. Mr. Robinson hopes to get the cost down to $30. Construction of improvements at plantations (particularly the fences to keep out rabbits and other destructive agents) has been very expensive. Last year 20 million seedlings were produced, and the nurseries are equipped to produce 35 million per year. The coniferous species planted are used in the following approximate percentages:

Scotch and Corsican pine	40%
Norway and Sitka spruces	28%
Larches	15%
Douglas fir	12%

Planting of hardwoods is also done on a considerable scale. Mr. Robinson told me that Douglas fir grows very thriftily in Britain as does the redwood (Sempervirens). Redwood, however, is not yet being planted on any large scale.

In addition to the above activities the Commission handles the 60,000 acres of Crown Forests. These forests were in places culled over during the war to supply wood material. The home production of timber products in England and Scotland is about 9 per cent of the consumption which, last year, approximated 4½ billion feet. This is a decrease of 2½ billion feet from pre-war consumption figures.

About 90 field men are employed by the Commission; of these 30 are highly trained technical foresters - the balance being analogous to our Ranger and Guard force, although I got the impression that these men also received training in forestry practice at the expense of the Government. Fire is not a serious problem in England and Scotland.

Every 5 years a British Empire Conference is held to consider forestry problems. The first conference was held in London - another in Canada this year. The next one is to be held in Australia 5 years hence. General Lord Lovat presided at the conference in Canada.

Mr. Robinson and I visited the operations of the Union Lumber Company at Fort Bragg, Calif.; were shown the nursery established by that company in connection with its reforestation plans on cut-over redwood land. Douglas fir, Sitka spruce, and redwood are the species planted in greatest number. The seedlings of these species were growing most thriftily. It is hoped to produce 3 million plants annually. We were shown through the mill which turns out 400,000 B. M. of redwood lumber daily. Then we were taken into the woods, viewed an experimental plantation of conifers and hardwoods made two years ago; witnessed the logging of the huge redwood logs, and went through a virgin area of redwood.

The following day we drove by motor from San Francisco to the Tuolomne Ranger Station on the Stanislaus, where we had an enjoyable visit with District Ranger Kloppenburg. We then drove into the Yosemite and after spending a few hours there proceeded to the Mariposa Grove of Big Trees, where Mr. Robinson obtained his first view of a virgin stand of Sequoia Gigantea and an appreciation of the great size of the individuals. We drove through the logged-over lands of the Madera Sugar Pine Company, where regeneration of the natural species was abundant and reached the Supervisor's headquarters at Northfork, where we partook of Supervisor and Mrs. Benedict's well known hospitality. Mr. Robinson was then driven down to Fresno to catch his train. He was a most interesting traveling companion and more familiar with our species of trees, their range and their habits than many American foresters. It was good to get his viewpoint of our situation and problems and to learn at first hand of the progressive forestry work being done by Great Britain.

OLD CHESTNUTS FOR NEW

By W. R. Mattoon, Washington

Experiments aimed at finding or developing a blight-resistant strain of chestnut are under way at Bell Station, midway between Washington and Baltimore. The work on the orchard nut-tree phase is cooperative between the Offices of Forest Pathology and Horticulture, Bureau of Plant Industry of the Department of Agriculture, and the forest timber phase between the Offices of Pathology and the Forest Service.

Some of the trees which are being used as a basis for the experiments are as follows: (1) CHINESE CHESTNUT (Castanea mollissima), a medium sized tree, native of central China, with a nut somewhat larger than our sweet chestnut and nearly as palatable. It is somewhat resistant, but subject to infection and some trees have been killed primarily by the blight. Some of the trees of this species at Bell have made a very good height growth.

(2) CHINESE TIMBER CHESTNUT (C. vilmoriana or Henryi), a large timber tree, native to central China which is being investigated with a view of finding a timber substitute for our own chestnut. This species has not yet produced any nuts.

(3) JAPANESE CHESTNUT (C. crenata), mostly resistant to the blight, a small tree with large, attractive looking nuts, rather bitter to the taste from their tannic acid content. Not the most promising species for nut production.

(4) INDIAN CHESTNUT (C. diversifolia), a large evergreen tree native of the tropical mountains of the Bengal-Assam-Siam region. This is reported by Wood as a prolific bearer of sweet chestnuts.

(5) OUR NATIVE CHINQUAPINS (C. pumila, and other species), small trees, bearing the well-known edible chinquapin nut. These species are slower to become infected than our native chestnut. Because of the development of new healthy shoots from below the ground level a bush will often continue to produce nuts for a good many years in presence of the blight.

These species along with other named and unnamed species from Asia are being kept in captivity and cross-bred in various ways as they come into fruiting. The officials have about given up experiments with the Japanese chestnut because of its bitter flavor and the greater promise of desirable hybrids for nuts and timber from other species. Two small plantings of the Chinese chestnut (C. molissima) have been made for timber purposes on the Natural Bridge National Forest, and two of the Indian evergreen chestnut on the Florida National Forest.

Over in China there is an explorer of the Office of Foreign Seed and Plant Introduction of the Department of Agriculture searching the Himalaya uplands for new species and varieties of chestnut and closely related genera for use in propagating stock for research in this country. It has been possible to germinate only a small per cent of the nuts from this region due to the length of time they are on the road, sometimes months before they reach the coast.

A considerable number of chestnut seedlings of various species and hybrids have been shipped by the Bureau of Plant Industry for testing as nut producing trees in various parts of this country. The seedlings for regions outside of the blight area were distributed from the station at Chico, Calif.

DELINQUENT GRAZING FEES

Fiscal Years 1921 and 1922

By W. C. Barnes, Washington

A summing up of the total amount due the Government for unpaid grazing fees for the fiscal years 1921 and 1922 shows that the amount while somewhat larger than we looked for is still less than 2 per cent of the total grazing receipts for the two years, which amounted to $4,758,000.

By districts the number of permittees and the amounts are as follows:

District	Number of permittees	Amount
1	66	$2,691.53
2	248	12,888.08
3	409	56,281.11
4	146	3,649.70
5	13	592.31
6	148	5,307.24
7	26	480.94
Total	1,056	$81,890.91

SERVICE LIBRARY CONTAINS 23,386 VOLUMES

By E. N. Munns, Washington

Probably it will come as a surprise to most members of the field force to learn that the total number of books in the Forest Service library numbers 23,386. Six hundred and forty-six new books were added last year, while 444 were discarded or returned to the main library of the Department, leaving a net increase of 202 over those in the files of last year. In addition, the library keeps a file of 89 current periodicals which, with 83 sent over regularly from the Department, are circulated among members of the Service. These, together with a large number of miscellaneous periodicals received by the Service are gone over by the Librarian, and all articles on forestry and allied subjects are indexed for the card catalogue. Last year 2,916 books and articles were so indexed. How extensively the library is used is realized when 10,615 books and periodicals, nearly half the entire library, were charged out last year, while 1,415 people consulted the library in person. One hundred and fifty-one people borrowed books direct. There are 161 field libraries to which 399 books were added during the year. The total number of books in the field libraries now is 32,862.

In the card catalogue there are some 1,600 specific subject headings besides several hundred proper names of people, places, associations, etc., while a great many scientific names of plants, insects, and tree diseases are also given specifically. Behind these topical headings are approximately 150,000 reference cards. Besides English, the principal languages in the library collection are French, German, Italian, Spanish, Russian, Portuguese, Swedish, Finnish, and Danish. There are also a few books in Greek, Polish, Hungarian, and Japanese. Most of the requests coming to the library are for information on forestry subjects, such as for bibliographies on certain phases of forestry, special forestry articles, or material for preparing reports. Many of the questions can be answered quickly by consulting the catalogue, while for general questions there are encyclopedias, dictionaries, and other reference books.

ACTIONS AND REACTIONS

By C. M. Granger, D-2

(Temporarily detailed to Washington office)

Every now and then some Washington or District officer comes back from the field and in the Service or District committee meeting or among groups in the lobby tells of some more or less serious reaction he has encountered among the men in the field. The complaint is that there are too many inspectors so field men have to spend all their time showing the inspectors around; or there are too many inspectors and too much pressure from Operation so that all the field men have time to do is to move fire tool boxes around and grind the axes when they ought to be up on the sheep range; or that they must spend all their time building roads and trails while the timber purchaser leaves high stumps and unpiled brush; and so on.

Upon receipt of such tidings the more easily alarmed among us are apt to draw together and take counsel, asking each other: "Is the Service being disorganized? Is the old spirit gone or going? What shall we do about it?" And then perhaps some one of the higher-ups who can do something about it, if necessary, buttonholes one of the reactors and says, "What's this I hear about things going to pot?" Whereupon the reactor says, "What do you mean, going to pot?" "Didn't you tell Blank," asks the higher-up, "That your men were all sore and disgusted because there are so many inspectors running around that they can't dodge 'em all?" Whereupon the reactor looks down his nose a minute, smiles a little smile and says: "I believe I did bawl a little when Blank was here about too many inspectors, but I didn't suppose he would take it so seriously. I do believe we could get along with a few less inspectors and that those who come might well stay a little longer and see something of other lines of work than their own so they would comprehend our entire problem and realize we have more than one thing to do; but I don't think any great harm has been done and I certainly didn't intend to give the impression that we were about to go into the hands of a receiver."

Now ninety-nine times out of a hundred these rumblings are merely steam escaping out of a safety valve. Ranger Bill gets momentarily disgruntled because they want him to do too many things at once and, like a good American, he cusses somebody out to whoever happens to come along. But have you noticed that while he is cussing he is performing? Have you observed that while he is reacting he is also acting? Have you noticed that while we have been using our inherent right to kick about the super-pressure and super-inspection of the past few years, we have gone right ahead and greatly strengthened our fire organization, cut down losses, elapsed time and costs, overhauled equipment, sold more timber, got sales into better shape, built management plans, laid out recreation areas and handled doubled tourist hordes, multiplied our publicity tenfold, built a flock of good (even if nine-foot) roads and trails, and put over the most gigantic appraisal of range lands ever attempted and accomplished in any man's country?

Whenever the day comes that there are no "reactions" the Service will be ready for the lilies. It is because men of the Service think and care that they kick. The men of the Service are strongly individualistic. The character of the work, the responsibility handed out, the leadership, all tend strongly to attracting and developing individualism and independency of thought and opinion. Whenever that individualism dies the Service is a goner. Individualists say so when things don't suit 'em, but they don't lie down and quit after airing their views. And when a well-based kick comes along the men who can do something about it usually do something about it. Let's not worry about reactions as long as we get actions.

THE D-6 OLD TIMER SAYS:

I jest got back from the road camp whar I'm training fur ter be a lookout fer the Forestry Service this summer and now I'm all ready ter go ez I hev a badge on my suspendeds an a nice new canvas sack with "Forestry Service" painted on ut, an a leetle book ter write down evrythin thet I do in.

I figger thet I'm goin ter enjoy this here job uv findin work fer the other fellers ter do.

The soupervisor splained all about this here lookout job an all I hev ter do is ter find the smokes an phone ter the button push an give him the readin an then fill out five diffrunt papers in triplicate tellin all erbout ut sich ez when did it start an when did I see ut an if not why not.

An this here button push ut seems he sets in frunt uv a put and take tellephone fixin an he hez a map that shows whar all the fellers aint on the forest by usin a brass head tack fer ter represent the road crews an a bone head tack fer the guards an a ivory head tack fer the rangers an a pin fer the soupervisors an a needle fer the deestrict officers wher they come ter visit us an e.tc.

An the boys hez their Lizzies all honed up an we hez decided that we will hold down the number uv abnormal fires ter the minimum iffin it takes every dod rotted pencil in the supply deepo.--F.V.H.

WASHINGTON NOTES

New Booklet on the Southern Appalachian National Forests: "The National Forests of the Southern Appalachians" is the title of a very attractive booklet just issued by District 7. It deals primarily with the many excellent recreational advantages of the forests of North Carolina, Georgia, Virginia, West Virginia, South Carolina, and Georgia, a region becoming known as the "Playground of the South and East."

Many well-known resorts are either within or adjacent to the boundaries of these southern forests. Asheville, North Carolina, in the "Land of the Sky," and the Natural Bridge of Virginia are two of the better-known places. The historic Shenandoah Valley and the country between Atlanta, Georgia, and Knoxville, Tennessee, also offer many delightful recreational areas.

The southern Appalachian Forests were acquired under the Weeks Law for protecting watersheds of eastern rivers and now embrace 1,500,000 acres with plans calling for purchasing an additional 4,000,000 acres. The recent establishment of the Allegheny National Forest in Pennsylvania was a step in carrying out the purchase program.

District 7 can be counted upon to do a great deal in "selling" the Appalachian Forests to the public during the next few years. Already many thousands of campers and hikers visit the Pisgah Forest each year and the charms of these southern mountainous regions are becoming much better known through the East.

FOREST PRODUCTS LABORATORY

About Toothpicks: The principal wood used for the manufacture of toothpicks is birch, although some maple is also employed.

The entire output is furnished by four or five large manufacturing plants located in Maine, Michigan, and Minnesota. Statistics collected some years ago showed that approximately 4,000,000 board feet of birch and 1,200,000 feet of maple were used, although possibly some of the maple was manufactured into matches.

It is estimated that one cord of wood will yield six or seven cases of picks. A case consists of 96 dozen boxes, each containing approximately 1,000 picks. Figuring one cord of wood as equal to 500 board feet, the approximate annual production of toothpicks, based on the above figures, would be over six million dozen boxes.

What Kind of Wood Is It? "During the month 135 wood specimens submitted from 45 sources were identified," is a typical statement of part of the activities of the wood identification section of the Laboratory. Requests for such information come from private individuals as well as from large industrial firms, although not many have been received from the regions of the National Forests. Possibly the opportunity for this sort of assistance on wood problems is not so well recognized by regions remote from the Laboratory. However, it might be at times an opportunity for another Forest Service contact if forest users could be referred to the Laboratory for help in identifying wood.

FOREST EXPERIMENT STATIONS

In connection with the meetings of the Pacific Division of the American Association for the Advancement of Science at Los Angeles, Lieutenant B. H. Wyatt explained his theory of long range forecasting. As a result of his studies he was able three days in advance to warn the astronomers collected in southern California to study the eclipse of the cloudy weather which would be experienced. He has found that when the upper air is fifteen degrees warmer than below, the coast of southern California is in for a fog. Ordinarily there is a fall of three degrees for each thousand feet ascended, but this is reversed when the hot air currents, rising from the deserts of southeast California and Arizona, move seaward and overrun the cold damp air from the ocean.

We can shortly expect the men at the Forest Experiment Stations who are engaged in the study of fire to put in a requisition for a Curtis-biplane instead of a Ford.

DISTRICT 1 - NORTHERN DISTRICT

Spiral Grain Trees - The Answer: Ranger Allen F. Space of the St. Joe inquires in the February number of the Bulletin whether a spiral grain always runs in the same direction. I have found from recent observation that in the case of yellow pine the spiral invariably runs from left to right. I do not believe there is ever an exception to this in yellow pine. The spiral in tamarack and lodgepole runs the same way. To my surprise, however, I found that white pine, white bark pine and white fir do not follow this rule, and in these species the spiral runs from right to left. Cedar rarely has any decided spiral grain, but such twist as there is seems to run the same as white pine.--E.K.

Camp Robber's Nest Found: Much has been said about the camp robber, but it seems that little is known about the nesting habits of the bird.

It is fairly authentically reported that it nests in February and at rather high elevations. On my District, in company with the Supervisor and the Deputy, we found a camp robber's nest on May 29, 1923, at an elevation not to exceed 6,000 feet. The nest was made of dry grass and about 7 feet from the ground in a dense stand of lodgepole pine reproduction which was probably 40 years old.

The nest had three young birds in it which had just hatched out; the female was on the nest with the young birds and the male was carrying food to the young ones.--J.J.McG., Beartooth.

Is White Pine Blister Rust Spread in this Way? A recent issue of the Journal of Agricultural Research recounts an unusual study of the dissemination of rust spores which attack farm crops. The investigators utilized airplanes to expose small vaseline-coated traps at elevations up to 16,500 feet above ground, making flights in Texas, Nebraska and elsewhere in the middle West. Spores of numerous species of rusts were obtained and later germinated. Such spores are probably carried long distances and may then be brought down by rain or some other agency. This field of investigation is new and the effect of far-blown spores in spreading rust diseases cannot yet be stated.--R.H.W.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Successful Planting on the Pike Forest: Recent examination of the Pike plantations indicate that last spring a work has been about the most successful that has ever been done. A total of 765 acres, principally Engelmann spruce and Douglas fir, was planted. Several counting plots in a 108-acre plantation of 3-year Engelmann spruce seedlings did not have a missing tree and the survival for this plantation is estimated to be 98 per cent. The success with Douglas fir seedlings is almost as great. In fact, even better survivals were secured with seedlings than with transplants and next year seedlings will be used almost exclusively on the Pike Forest. The examination showed that for exposed ridges bristle cone and limber pine are the only trees which can be planted successfully.

Final counts made in plantations which have been established for five years show survivals ranging from 60 to 80 per cent. This means an established stand of 400 to 550 trees per acre which, with the aspen on the area, is as many trees as are necessary for complete stocking.

H. N. Wheeler, Chief of Public Relations, has been detailed to Washington for six weeks, during which time he will assist in general Public Relations work.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Among the Old Timers: While the amount of paper work has multiplied, the red tape of individual cases is not as great to-day as it was some years ago. For instance, in 1902 an applicant wrote a long letter to the Secretary of the Interior requesting a permit to maintain and operate a small sawmill which had been built in the Chiricahuas. The "Forest Superintendent" wrote a six-page report followed by six pages more in longhand at a later date. In March, 1903, the Commissioner of the General Land Office submitted the matter to the Secretary of the Interior, who wrote a two-page letter of approval, whereupon the Ranger secured a duly signed, witnessed and bonded contract which he sent to the Commissioner in Washington and thence to the Secretary again, who wrote another letter of approval. Each separate paper was jacketed and the jacket numbered and dated and the nature of the contents written on the cover. All for a small sawmill permit.

Among other old cases is one on the Lincoln where Forest Supervisor John Kerr in 1906 issued a permit for a steam plow circular sawmill with a seven-cord daily capacity and required a $1,000 bond. He says the Ranger in the case who witnessed the bond was later discharged for horse stealing.

Supervisor Swift made a report in 1908 for a sawmill permit in the Mount Graham and received a much initialed letter from Washington asking for a new agreement with a bond. He put up a characteristic reply pointing out that it was a small portable mill to be used only about sixty days on an area of little fire danger, and that the mill would cut out seventy-five cords of dead wood which he was "exceedingly glad to get rid of." The bond was waived.

New Supervisor for Crook: Mr. Rex King identified with D-3 since 1909 has been chosen as the new Supervisor for the Crook National Forest. King's wide experience on nearly half the forests of the District as well as his long and efficient service in the office of Lands make him well fitted for his new position which he is expected to take over on December 1.

Specialist Leaves Service: On December 1 Mr. M. W. Talbot for many years connected with grazing studies in this District leaves to take a position with the Bureau of Plant Industry. His headquarters will be in Washington where it is understood that he will be in charge of the Bureau's work on weeds.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Some Figures on Sheep Grazing: Assistant District Forester C. N. Woods, while on the Uinta, ran across an interesting proposition in regard to cost of running stock on the range. A Mr. Ingersoll has been running sheep on Reclamation Service lands in Strawberry Valley near the Uinta Forest for three years now. It costs him $2,900 per year to run 2,900 sheep on this area. He has a six months privilege there, but the feed is short and he can actually use it only about five months, and this year is unable to run all of his 2,900 head, so actually the range is costing him $1.14 per ewe. It is interesting to note in connection with the split fee question that Mr. Ingersoll pays 10 per cent of his grazing fee at the time his lease is signed in October, some six months before he goes on the range in question, this amount being practically the same as the entire grazing fee charged by the Forest Service in the same region. He has run sheep on the Uinta Forest in earlier years and considers the forest range better, and all things being equal, lambs fed on the forest range come off two to three pounds heavier in the fall. The range which he leases is common use and subject to cattle grazing over which he has no control. On the north side of Strawberry Valley, on range used by a different outfit, it costs about 90 cents per head. The range is overstocked and is probably deteriorating. Mr. Ingersoll is an experienced sheepman and has been in the sheep business for many years and is satisfied with the proposition, even with better than $1.00 per head grazing charges. In an attempt to run sheep on his own private lands some years ago, he found that taking into consideration the interest, investment, and taxes, it cost about $2.40 per head for a six month period.

DISTRICT 5 - CALIFORNIA DISTRICT

Exhibit Receives Favorable Comment: Three new and picturesque exhibits of the Forest Service, the Biological Survey, and the Public Roads Bureau, attracted a great deal of favorable comment at the fairs held this season in California. Paul Fair of D-5 designed the settings and modeled the figures appearing in the Forest Service exhibit, which, according to a great many people who viewed the shows, was one of the most attractive exhibits ever shown by the Government. The recreational advantages offered by the National Forests and the necessity to be careful with firs were the two main subjects of the exhibit.

More Recreation on the Lagunas: The members of Al Bahr Temple, Nobles of the Mystic Shrine of San Diego, are planning a fine summer recreation camp on the Laguna Mountains, Cleveland Forest. Recently 70 automobile loads of members and their families spent a day there in selecting a site for clubhouse playgrounds and individual summer homes.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Pontoon Phone Line on Santiam Forest: Something which it is believed is entirely new (at least the Santiam has never heard of it before) is a pontoon telephone line, the invention of Fire Chief Short. This line extends for nearly a quarter of a mile across Fish Lake. The poles that were set in the lake bottom last fall were pulled out by the ice, leaving our line in the water. Short came to the rescue and built some pontoons by using large logs, making a sort of raft which he anchored in the proper places by means of heavy stones and #9 wire and erected poles upon the pontoons to which are attached swinging insulators. The line is being held up very satisfactorily by this arrangement. It has excited quite a number of comments from people who have seen it.

PR and the Fleet: During the Fleet's two weeks' stay, beginning July 9 at Port Angeles, District Ranger Morgenroth of the Olympic Forest officially invited the men to visit the National Forest, at the same time calling attention to the necessity for individual camp fire permits and requesting their cooperation in the prevention of forest fires. This action on Mr. Morgenroth's part was very much appreciated, as is evidenced by a very flattering letter received by him from Rodman, Admiral U. S. Navy, Commander-in-Chief, U. S. Battle Fleet. Over 1,000 camp fire permits were issued during the Fleet's stay and, according to Mr. Morgenroth, all men who had the pleasure of accepting his invitation strictly complied with the fire laws.

DISTRICT 8 - ALASKA DISTRICT

Exhibit Wins High Praise: At the Southeastern Alaska Fair held in Juneau September 20to 22, there were three Government exhibits, one each by the Weather Bureau, Biological Survey, and Forest Service, all in the Department of Agriculture.

The Forest Service and Biological Survey had adjoining booths each 8x8', similarly constructed and decorated. The Forest Service booth was planned to advertise water power and pulp resources of southeastern Alaska. The booth attracted a great deal of attention and many favorable comments. Many questions were asked in regard to water power and timber and the conditions under which these might be developed. Our display received "first award for Government exhibit," and was one of the most attractive booths of any kind at the fair. It is felt that the effort, which took considerable time to prepare, was well worth while and that the impression made upon the public was distinctly favorable.

The Southeastern Alaska Fair as a whole was better attended than last year, also a financial success and no doubt will be continued.

The Agricultural Experiment Station also had a splendid exhibit in addition to the three Government booths already referred to, showing agricultural products from both Sitka and Matanuska.

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NINE-FOOT ROADS UPHELD

By Aldo Leopold, D-3

In the October 1 Service Bulletin, Mr. Wheeler of D-2 fires both barrels at the current road policy. Nine-foot roads, he says, are not roads at all because (1) they do not please the public, (2) several people have fallen off of them, and (3) they cannot be adequately drained. The remedy, according to Mr. Wheeler, is to build roads at least twelve feet wide instead of nine.

The argument that interests me most is the one about pleasing the public. In the twenty years of Forest Service history have we been engaged in pleasing the public or in leading the public? Most of our successes, it seems to me, have occurred where we deliberately led instead of catered to public opinion.

The present road policy, as I see it, is based on the following principles: (1) The West needs a huge mileage of roads in proportion to its taxable wealth; (2) either mileage, or quality, or width, or the solvency of public treasuries must be sacrificed; (3) the current Forest Service policy sacrifices width first, mileage second, and quality last of all.

The current policy of other road building agencies often seems just the opposite. Certainly in the Southwest there are great numbers of instances where even maintenance is being sacrificed to the craze for new expensive mileage regardless of cost or volume of traffic.

Naturally the unthinking public is not always pleased. They have been given a champagne appetite to go with their beer purse. But the thinking public is beginning to see a light. The other day the leader of the New Mexico Taxpayers' Association volunteered the statement that the Forest Service was the only road building agency that had any policy in the proper sense of the word. He cited a certain nine-foot road, built narrow but durable and well, and said that was the type of road the whole State must come to for all but the main arteries of traffic.

As to drainage, is it not easier to get the water off a narrow road than a wide one? As to safety, there are prairie-raised people who complain bitterly of the danger of driving up an eighteen-foot mountain road recently built in this District. This "safety" is a mental, not a physical, state. As to twelve-foot roads, what do we gain for the extra expense, outside of a little additional feeling of safety? It's still a single-track road. Why not invest the difference in quality and durability?

ALKALI RANGES AND SALT

By J. C. Whitham, Custer

There has been much comment on this subject at various times in Service bulletins, such as the article under the above heading in the District 3 notes of the April 16 Washington Bulletin. My observations in regard to the necessity of salt on alkali ranges differ considerably from the general conclusions arrived at by Supervisor Arthur.

A small experiment along this line was carried on upon a portion of the Lee Creek District of the Custer National Forest last season and representatives of the Service from the District Ranger up to the Washington office all agreed that so little of the salt which was put out was utilized on this range, due to the presence of alkali, that salting requirements were impractical on that tract. I have also made observations outside the National Forest along the Yellowstone River where 500 head of cattle have been fed one winter in a pasture watered by a side stream with a high alkali content. One hundred pounds of salt were put out in two salt boxes readily accessible to all the cattle in the pasture. Three months later the salt which was ordinary granulated stock salt practically all still remained in the boxes with the exception of that which had been lost by trampling and leaching. The next winter the same number of stock were fed in a pasture just a mile down stream where the only available water was from the main Yellowstone River, which is only slightly alkaline. Considerably over a thousand pounds of salt were consumed by the same herd during that winter feeding season.

I do not wish to be interpreted as not being strongly in favor of the salting requirements in our grazing regulations and we are actually requiring it on certain allotments on the Custer, but I do believe that the salting regulations should be administered with a great deal of judgment on the alkalied ranges. There are all kinds and characters of alkali but in few places has nature been so fortunate in her distribution of alkali licks and alkali springs as to fully supplement the need of artificial salting. There are, however, several allotments on the Custer National Forest where this is true. There is only one sure test and that is follow out the plan used by Ranger Wood of trying out salt, and if the cattle do not eat the salt it is the only certain proof that artificial salting is not needed.

The chemical analysis of licks and springs will usually indicate quite clearly the ranges upon which the Glaubler's salts appear to be insufficient, but such analyses as have been made here indicate that the chemical combinations are so varying and complicated that it is very difficult to be absolutely certain through the use of this method, and the simpler and more practical test of actual trial on the ground is much to be preferred.

There is probably no portion of the country where the opposition of the stockmen to any salting requirements have been more bitterly contested than on the Custer, but they are fast learning here that there are really comparatively few ranges or at least portions of allotments upon which some artificial salting cannot be used to good advantage. As stated above, the question is simply one which can be worked out best through experimentation on the ground, for on the same range under different forage and seasonal conditions stock will utilize salt to good advantage during one season while they will scarcely touch it during another season.

I think, however, that as a general proposition the Service should not be too hasty in deciding that salt is needed or that it is advisable to lay down hard and fast rules regarding the use of artificial salt on strongly alkalied ranges as we have yet in most cases an awful lot to learn about when and where salt should be required on the alkalied types of our ranges. Artificial salting is so generally applicable to the fresh water ranges of District 1 that a feeling is very liable to develop in our organization that it is applicable and entirely necessary under any conditions.

WHY NOT USE GENERAL LAND EXCHANGE LAW?

By F. C. W. Pooler, D-3

All Forest officers know that the General Land Exchange Bill passed at the last session of Congress and that it is now possible to consolidate scattered private holdings within Forest boundaries and in so doing relieve the Service of the increased cost of administration due to land complications. Before there was such legislation a good deal was heard from Supervisors on the need for it and of the interference scattered private holdings caused with orderly administrative plans. Now we have the legislation we are hearing less about said interference. If the interference existed and still exists, then Supervisors should view the exchange legislation as a tool and a big opportunity to take the initiative in lining up private holders and interesting them in exchanges that will work out to our mutual benefit.

Supervisors and Rangers should not be satisfied to sit back and allow an affective tool to rust through non-use on the theory that the first move should come from the other fellow. Let us make an exception of the exchange business and put this new operation as far as we can on the basis of initiation by the Service. So much of our business is handled on application by the users. Can we not turn the tables to some extent in our exchange work and ourselves pop the question? It is recognized, of course, that we can only go so fast and that there is only so much time that can be given to one activity. But let us not forget that the existing exchange legislation gives us a usable tool for consolidating Forest as well as private holdings and for acquisition of desirable private land within Forest boundaries at the expense of Forest stumpage or non-forested lands. Let us make such progress as we can.

Editor's Note.--Although the above was written by District Forester Pooler for circulation in District 3, yet it seemed worth while to reprint it in the Service Bulletin so that the Forest Service as a whole could read it.

OSMOTIC PRESSURE AND ENVIRONMENT, OR, HOW HARD CAN A PLANT PULL WATER

By F. S. Baker, D-4

It certainly takes a variety of things to make up forestry, doesn't it? I have had this impressed upon me by a report I've just been reading. The name of it is: "The Density of Cell Sap in Relation to Environmental Conditions in the Wasatch Mountains of Utah," by C. F. Korstian, now of the Appalachian Exp. Station. Some day it is quite probable that you will have the opportunity of reading it in the form of a Government bulletin, but to tell you the truth, the thing is no novel, and we are willing to bet that most of you will not get very far with it. It is very interesting, there is no doubt about that, and so I am going to make a stab at telling you what it is all about without getting into the highbrow stuff - if possible.

First of all, it is a piece of scientific work that gets down toward the roots of things, and which accordingly seems of little present value to us. Just the same, in order to be foresters we have got to understand trees, and to understand trees we have got to know how they live and how their insides work, just as much as a doctor has to know such things about human beings. Consider this "density of cell sap" business. You know that there is juice in the leaves of all living plants. That juice is not just plain water. It has sugars and other things dissolved in it. You would be surprised to see what it really is like. You can soak it out of pine needles with water, which, boiled down, finally becomes something that looks and smells like peanut brittle without the peanuts in it. It tastes like quinine and molasses. Now, this stuff dissolved in the cells of plants has a good deal to do with various life processes, but one of the most important things it does is to exercise what is called "osmotic pressure." If you take a parchment bag, fill it with molasses and tie it up tight and put it in water, the thing will swell and swell until it finally bursts. The water has been powerfully sucked in by the molasses which has not leaked out. The collection of cells in plants is always doing the same thing. The "molasses" in their cells is all the time sucking water from the soil. At the same time the water in the soil is not pure water, but has lots of salts dissolved in it, which make it work against the plant. If the plant is going to stay green and fresh it has to suck harder than the soil. You would be surprised to know how hard a plant can pull with its cells. Korstian found sagebrush on the salt flats west of Salt Lake City, where it had to get up a good lot of force against the salty water of the soil, sucking with a pressure of 750 pounds to the square inch. Average plants in our mountains do not have to work so hard, and only hit it up at about 300 pounds. The trees in general pull harder than the shrubs, and the shrubs harder than the herbs because the tall plants not only have to pull the water loose from the soil, but have to hoist it up in the air as well. The drier the soil, the harder it holds the remaining water supplies, and the harder the plant has to pull to get that water away. If a rainstorm comes and wets up the soil, the plant does not have to work so hard and reduces its osmotic pressure. Accordingly, the pressure varies from day to day and from season to season with the amount of water available. The juniper, which grows in hot, dry places, ran pretty nearly 400 pounds to the square inch in the last part of July. The same time, blue spruce growing in a canyon bottom only reached 195 pounds to the square inch. If you put that blue spruce where the cedar was growing, it would dry up and die, simply because it is not equipped with a strong enough sucking apparatus to get the water loose from such very dry soil.

Well, what is the use of knowing all this? It was developed with this in mind; we want to choose sites in our forest planting work where the trees will flourish. How are we to choose such sites? Suppose we find out that western yellow pine can suck water from soil with a force of about 400 pounds to the square inch; after that it gives up and dies. We can go to a planting site and find out how hard the native vegetation is pulling on the soil during the driest part of the summer. Supposing the shrubs are hitting it up at the rate of perhaps 500 pounds or 600 pounds to the square inch. It needs no scientist to tell you that that is no place for western yellow pine. It may appear to you that the same thing could be determined with less trouble by merely studying the water content of the soil. It is not so, however, because the difficulty a plant experiences with drawing that water depends not only on the amount of water in the soil, but on the character of the soil and upon the dissolved salts in the water. Furthermore, from what depth are you going to take your samples of soil? You want them at the point where the roots are drawing the moisture. Who knows where that is? So it really looks as though this method might tell us some valuable facts about the dryness of various sites in the opinion of the plants themselves - facts we could not learn in any other way.

You might be curious to know how this pulling power, which depends upon the density of the sap in the plant cells, is determined. The method is really quite simple once you get the apparatus together. Leaves are gathered and put into little glass bottles which are placed at once in a mixture of ice and salt, which freezes the leaves. They are then taken out and thawed, and are of course then limp, black, and mushy. These leaves are then put into a powerful press and the juice is squeezed out as completely as possible. This juice is then placed in a little bottle with an extremely accurate thermometer which will read to the thousandth of a degree stuck in it. This apparatus is then put into a mixture of ice and salt until the sap freezes. At that instant the temperature is noted. You all know the more salt or sugar you put in water the harder it is to freeze it. It works the same way with this plant sap. Tables are worked out so that once we know the freezing point, the osmotic pressure can be determined and that osmotic pressure tells the story of how hard the plant had to suck water from the soil where it was growing. Sort of a complicated thing, isn't it? But just the same, it is interesting and shows some of the possibilities that scientific methods have for the forestry of the future.

WASHINGTON NOTES

MacDaniels' Mule: Not everyone has the gift of speaking in parables; but Supervisor MacDaniels of the Siskiyou has set a classic example in his parable of the mule. It is taken from a letter to Capt. Edward C. Crossman, who a few months ago wrote an article in THE OUTLOOK advocating light burning - an article that was replied to by Associate Forester Sherman. MacDaniels, in his contention that the forests have survived in spite of abuse and not because of it, cites the case of the mule that was suffering from the "scratches":

"I remember a well-to-do farmer who had a mule that had cut itself somehow. The wound was not healing; he bled it for the 'scratches.' He was a little hazy about what the 'scratches' were, or just what effect bleeding had on them, but he had a profound conviction that bleeding was the proper treatment for them, and supreme contempt for anyone who differed from him. The mule was a sturdy beast and recovered from both the cut and the loss of a gallon or so of blood. That proved that the diagnosis was correct and the remedy was well chosen. I have not a doubt that the people of the neighborhood, who had long heard bleeding advertised as a cure for scratches, were willing to agree with him. He was a prosperous farmer who knew his business; he had handled mules from his childhood; the mule survived. What better proof would you want?"

Capt. Crossman, in a cordial reply, admits that he is "pretty well sold" on the present policy of fire protection, and urges MacDaniels to put out some of his material for publication.

Value of Forest Products Laboratory Acknowledged: Some very favorable comments on the Laboratory have recently been made in the editorial columns of various lumber journals. The Southern Lumberman said: "When the Laboratory was established a big proportion of the rank and file of the lumbermen looked on it as a foolish waste of time and money.----The work of the Laboratory has fully demonstrated its worth."

The Hardwood Record: "Never in its history has the Laboratory at Madison occupied so important a position with relation to the lumber industry.------The Laboratory organization has so secured the confidence of the lumber industry that it is now the accredited advisory agency in the whole standardization movement. Its praise is sung by men who have made reputations and fortunes through the intelligent application of practical knowledge of lumbering."

FOREST PRODUCTS LABORATORY

Column-Testing Machine on the Job Again: A total load of 169 tons, or to be exact, 338,500 pounds, was the record made by the best one of the twenty southern pine timbers recently tested in the big machine. The average load for the lot was 284,000 pounds and the minimum only 161,100 pounds, hardly half that of the best timber.

These long columns have been air seasoning for two years; the greatest load sustained by any of the green timbers, previously tested, was 367,500 pounds. All of these timbers are 24 feet long and approximately 12 inches square.

Woods for Organ Pipes: The woods most commonly used for organ pipes are eastern white pine, western white pine, sugar pine, western yellow pine, yellow poplar, basswood, redwood, and cypress. Desirable properties for this purpose are ability to "stay put" when properly dried, ease of working, capacity to take finish, and the quality of being reasonably air tight.

Advanced Course in Forestry Given by Laboratory Members: A series of lectures in a course known as "Forestry: Production and Utilization" is to be given during the first semester at the University of Wisconsin.

A part of the lectures pertain to laboratory work, but the greater portion of the time will be given to forest production, and will include discussions of such subjects as protection, reproduction, growth factors, valuation, and silvicultural systems.

FOREST EXPERIMENT STATIONS

ENGRAVER-BEETLES

Ferdinand W. Haasis, Appalachian

"The east face of the Sandia Mountains in the Manzano Forest shows a large number of 'sorrel topped' trees. A close examination of these trees disclosed the fact that the bark beetles are killing considerable yellow pine timber on this area. It is estimated that close to 1,000 trees have been killed this year. Near the Tajique Ranger Station in the Manzano another yellow pine is badly affected with bark beetles. This area is not as large as the first one but a much larger percentage of the trees on the area are killed. Bark beetles are also taking a large toll of the pinon trees on the Manzano. On the pine the Dendroctonus beetles are doing the most damage, on the pinon, the Ips are working." (Daily Bulletin, Southwestern District, September 5, 1923).

For a number of years past trees killed by the southern pine beetle have been noted here and there in parts of the Biltmore Estate near Asheville, N.C. Unfortunately, one area of active infestation is in and near a sample plot established by Frothingham and Rhoades in 1916 for the purpose of making studies of thinning. This was a mixed stand of planted white and shortleaf pines, the latter somewhat dominating the former. The experiment was made of favoring the white pine at the expense of the shortleaf. The present insect attack, which is affecting only the shortleaf pines, suggests, as Mr. Frothingham has pointed out, that the encouraging of the white pines may eventually have a much greater significance than at first anticipated.

Other infestations have been reported on the Curtis Creek watershed in the Pisgah National Forest. On a recent trip to the Shenandoah National Forest, the writer noted sorrel topped and red topped pine trees at various places in the Shenandoah Division in what impressed him as alarming quantities. The

Supervisor is aware of the presence of these trees and is making sales of fuelwood in an effort to check the progress of the insects responsible for their condition.

These are scattered instances. A careful survey would undoubtedly bring many more to light. H. B. Peirson writes: "The time to fight an insect outbreak is not after the damage has been done, but immediately that an incipient outbreak is located.... It is time that the word 'control' be dropped and the word 'prevention' substituted, for there is no more excuse for widespread insect outbreaks than there is for the forest fire." ("Forest Entomology as a Subject of Importance to Foresters," Journal of Forestry for May, 1923). Has he overstated the case or can we well afford to pay more attention to this phase of our forest problems?

DISTRICT 1 - NORTHERN DISTRICT

High Climbers have Nothing on Research: A tall, lone western larch at the Priest River Experiment Station has just been topped at a point 6 inches in diameter and 150 feet above ground. The purpose was to install the electrically recording wind and sunshine instruments in a more suitable position. Iron pole steps make this elevated weather station accessible. After finishing the installation, Messrs. Kempff and Gisborne of the Station staff informally organized the Research High Climbers Society with themselves as charter members. Visiting Forest officers are invited to become members. The only membership requirement is that applicant ascend to station and inscribe his signature in the Society register placed there. Registration point 150 feet, looking up, and double that looking down.--H.T.G.

Camp Robber's Nest: In April, 1910, I was trapping bear with Harvey Maynard on the South Fork of the Madison about 6 miles from West Yellowstone. We found a camp robber's nest in a lodgepole pine about four feet from the snow. This latter was about two feet on the level. We frightened the old bird off the nest, so I suppose that she was setting. This was in a stand of lodgepole reproduction 50-60 years old and at an elevation of about 7,000 feet.--R.M.K.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Forest Service Exhibit in Local Department Store: The office of PR installed an exhibit in the auditorium of the A. T. Lewis & Son department store in Denver which was in place throughout the summer season. It consisted of a painted backdrop showing a green forest and a burned over forest. This was loaned to us by D-5. In front of the backdrop was built up a burned forest area and a section of living forest. In addition, a Ranger station was put up and a replica of one of the ruins at Mesa Verde National Park, this at the expense of Lewis & Son. Secretary Wallace, accompanied by Forester Greeley, formally opened the exhibit at Lewis' while they were here with the Presidential party.

It is thought that exhibits of this character really are more effective in putting over the forest idea than those placed at the big fairs, since in a display of this kind people have an opportunity to study them at length and get a better conception of what they are really trying to show.

New Boundary Signs for Game Refuges: The Colorado State Game & Fish Commissioner has had printed 40,000 refuge boundary signs for the thirteen different refuges of Colorado. A liberal supply has been furnished the Forest Service and will be put out by the local men in cooperation with the State Game & Fish Commissioner.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Walt Mason on Campers: The careless campers in my grove betray their lack of taste; they cook things on a patent stove in most unseemly haste. They open cans of soup and beans and throw the cans away; they strew the grounds with wasted greens, old papers, junk and hay. They sometimes set the grass afire, or scar the priceless trees, until I rise in martial ire and hand out lines like these. When autos first began to chase before my poor abode, I said, "My grove's a resting place for pilgrims of the road. It will be free to all who pass, to all good people free, and they may lie upon the grass and drink nine cups of tea. And doubtless in the caravan there'll be at times a cove who'll say, 'Now bless the grand old man who lets us use this grove!'". That grove is barred to tourists now, barred is that pleasant dell, since campers rounded up my cow and stole her new brass bell. Still come the chooing caravans, and endless, busy drove; but they can't leave their old tin cans around my sacred grove. In fifty years from now, perhaps, the tourist tribes will know they ought to gather up the scraps and clean up ere they go. (Worth framing for posting on Forest Service camp grounds.)

New Mexico Newspaper Boosts a Good Road: In former days the editor of the Taos Valley News was accustomed, when occasion demanded, to labor over the old team-killing U. S. Hill on the Carson in buckboard or wagon. A week or two ago he made a comfortable automobile trip up the new picturesque U. S. Hill road which was built by Dwire and Cottam and just completed during the summer. The next issue of the editor's newspaper extols the qualities of the highway in a column of praise and says among other things, "That work is a wonder. Portions of the road are as smooth as pavement and none of it is bad. Who did it? We see the men of the Forest Service daily and say hello and forget the striking value of their work on such projects as the U. S. Hill road. Let's tell these fellow citizens that we recognize their service and are proud of their effort. Here's to the Forest Service boys. We thank them and appreciate their service to the community."

Viewing the Tourists: To the old residents of Taos, it is a question during the San Geronimo Fiesta as to which is the more interesting, the Indian dances and relay races or the visiting tourists with their Stetson hats, bandana handkerchiefs, riding breeches, silk stockings and high heeled shoes. We are going to take a vote on this when the Fiesta is finally over.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

"Killa Me, Joe!" When the sheep of a certain permittee entered the Lemhi Forest, Ranger Pelton cautioned the foreman, Joe, about fire. He told him to see that the Basco herders were given proper instructions. The foreman agreed that he would see that they treated fire sacredly, so approaching the herders, he said, "Now you fellows be careful of your camp fires. Clear a big place around them and never throw your cigs or matches away unless they are dead out. If you let a fire get away from you, you will be shown no mercy. They will take you out without a trial or anything, and that Ranger will put a rope around your neck and hang you to the first tree."

A few days later one of the herders was taking a siesta under a tree with a smoke in his mouth, and he dozed off. The duff around him caught fire and started to smoulder, making more smoke than anything else. When the dozing herder awoke, he was surrounded by a smoke screen. It happened that the foreman, Joe, arrived just as the herder jumped up and started to beat frantically at the ground with his hat, yelling like a lunatic. In his frenzy, he didn't see the foreman until he was close by. He threw Joe a pleading look, and in a voice distorted with emotion he cried, "Joe, for God's sake, Joe, getta beeg gun, Joe, and killa me queek! I no lika be hung."

DISTRICT 5 - CALIFORNIA DISTRICT

San Francisco Is Waking Up: At last San Francisco has waked up to the recreation possibilities in the high Sierras and next season expects to join the list of California cities maintaining recreation camps within the National Forests. San Francisco has a number of suitable camp sites accessible to its Hetch Hetchy railroad, with ample buildings, water, light and power.

At Mather, 9 miles below the Hetch Hetchy dam, the lumber camp and sawmill operated by the city on a 400-acre tract will be closed early next year. This area would make a fine camp site, and the buildings now on the ground may be utilized for recreational purposes. Another fine location is at the "The Dye" Meadows, 5 miles nearer San Francisco. Water is more available at this camp, as the Middle Fork of the Tuolumne River is within a few minutes' walk. A fascinating ride of 9 hours from San Francisco over the Southern Pacific and Sierra and Hetch Hetchy railways will take the people of San Francisco into the heart of their own pleasure lands in the Stanislaus National Forest at low excursion rates.

From Mather, splendid motor roads lead to the Yosemite Valley, 24 miles distant, and trails radiate in every direction through the Stanislaus Forest and the National Park.--G.M.

Oh, Mr. Headley! The busiest Forest officer in California has been discovered. One of the Supervisors relates the following incident: "Some time ago when visiting on a neighboring Forest I stopped at a guard station about noontime, and while helping the Guard to cook dinner noticed that he wore neither belt nor suspenders, and consequently had to stop operations every few minutes to hitch up his nether garments. Observing my interest in the proceedings he finally confided, 'I've got a belt on my other trousers, but I've been so dang busy the last three or four days that there's been no time to change it to this pair.' Seems to me this calls for an investigation and an efficiency study; I'll bet if they passed a regulation prohibiting a man from hitching up his breeches there'd be enough time saved in a year to build a hundred miles of fire line!"

DISTRICT 6 - NORTH PACIFIC DISTRICT

Caught in the Act: A coyote was caught in the act of attacking a 6-weeks old calf elk by riders from the Tieton Cattle Association while bringing cattle to their summer range. The youngster's mother could not be located, so it was carried to the headquarters camp across a saddle. Ranger Brunn took it from there to the Tieton Ranger Station and fed it on diluted evaporated milk for several days until a Deputy Game Warden could call for it.

Latest reports from the Yakima County Game Farm are to the effect that the foundling is doing nicely on cow's milk and is attracting considerable attention from visitors.

Cooperation: The Cascadians, the mountain climbing club of Yakima, Washington, spent their annual outing on the Rainier Forest and Mt. Rainier region. Ranger Brunn assisted the Cascadians in planning their trip, and in return their printed prospectus carries a number of effective fire slogans.

Service Bulletin

U. S. FOREST SERVICE
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IN MEMORIAM

By E. A. Sherman

A few years ago Joyce Kilmer, a young American poet, wrote a brief poem entitled "TREES," an expression of sentiment so exquisite that it is an immortal contribution to our literature. In July, 1918, he gave his life in the World War in France. His part in forestry was unique and indirect, yet so pronounced as to warrant commemoration. To accomplish this the Joyce Kilmer State Forest Monument, a tract of 20 acres, has been established in the Bald Eagle State Forest in Pennsylvania. Within the limits of the monument is a natural amphitheatre known as the Joyce Kilmer Rest, and the approach to the monument is called the Joyce Kilmer Trail. The monument as a concrete demonstration of appreciation of a life of service and patriotism must inevitably inspire all who visit it with some of the reverent love of nature which characterized the man whose name it honors.

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In the World War nineteen members of the Forest Service gave their lives in their country's cause. Although they may have lacked the skill or the time to express in words, as Kilmer did, the love of country, of nature, and of trees, yet we know that such a love was deeply ingrained in the heart of each of them, and what they failed to express in words many of them demonstrated in accomplishment. Like Kilmer they all gave their lives in support of their ideals.

Why, then, should the National Forests not contain within their limits beauty spots, or camp grounds, or roads, or trails commemorating by name and by proper explanatory tablets the service and sacrifices of such men as Charles E. Simpson, Clark B. Waterhouse, Herbert H. Harvey, Roy Muncaster, Horace B. Quivey, Stanley R. Ausperger, Donald R. Frazier, Bert Lewis, Cosmer M. Lezeaux, Roy L. Greathouse, John L. Mooney, Hubert C. Williams, Eugene R. McGlaughlin, Ward Norris Woodward, Errold C. Crittenden, Marcy M. Meaden, Harry A. Chamberlain, Thomas V. Keefe, and Homer S. Youngs? The dedication to the memory of these men of appropriate areas, particularly areas with which they were in some way associated during their period of service on the National Forests, would add a touch of human interest and sentiment to the Forests, and would be evidence that the Forest Service is not coldly forgetful of its patriotic sons.

This is not something that can be brought about by cold official dictum. The fruition of this idea depends upon the interest and enthusiasm of those still in the Service who worked and lived with these men, whose names are worthy of every honor we can give them. There must first be the selection of an area, or road, or trail some way associated with the man, or some way expressive of what he stood for, or some way representative of some of his plans or ambitions. Only after that can the Forester take action. As an example, there is, for instance, the road on the Idaho Forest from McCall to Warren. When "Bert" Williams was Forest Assistant at McCall he traveled between these points many, many times and at all seasons of the year, through a sea of mud in spring and fall, a maze of chuck holes in summer, and on snowshoes over huge drifts of snow when otherwise impassable in winter. His wonderful physique and great feats of endurance amazed the natives of that region and won their admiration and respect. Later, as Supervisor of the

Idaho Forest, the need for a better road between McCall and Warren was always in his mind and his plans, not alone as a means to better Forest protection but also as a means of better public service. "Bert" Williams is gone, but the better road he hoped for is now there. Would it be inappropriate to designate it as the Hubert C. Williams Highway? The people who travel that road knew Williams and loved him, and no doubt would welcome such a designation.

BRUSH BURNING IN YELLOW PINE ON THE SITGREAVES

By Fred Merkle, Sitgreaves

Lopping and scattering or simply pulling tops are the usual methods of brush disposal now followed in the Southwestern District. Either of these methods leaves a very hazardous fire menace for several years following the cutting operation. Piling and burning would eliminate this hazard the first season, and the fire menace would be reduced at least ninety per cent.

Brush burning was, therefore, tried on the Apache Lumber Company sale, Sitgreaves National Forest, as an experiment and the results were so satisfactory that it was decided to continue this method throughout the operation.

The area on which the brush burning was done consisted of a pure stand of western yellow pine from which 10,000 feet per acre had been cut. It was well stocked with reproduction of seedlings two to four inches high, from the 1918 seed crop, and poles 25 to 50 years of age.

In all the burning a kerosene torch was used. This torch consisted of four feet of one-inch gas pipe at the top end of which was screwed a cap. The lower end was drawn in to a diameter of one-half inch in which a cotton wick was threaded. The inside was filled with kerosene and the wick was lighted. In this way the fire was carried from one pile to another.

The brush piling on the first 1,100 acres was done during the period of high wages in 1920 and 1921. The laborers were Apache Indians who received $3.50 per eight-hour day. The piling cost the company 55¢ per thousand feet. The burning was done in four days by fourteen men at a cost of 1.4¢ per thousand feet.

The brush piling on the 700 acres was done by Apache Indians whose wage was $1.75 for a nine-hour day, which made a cost to the company of 48¢ per thousand feet for piling. The burning of this brush was done by the Forest Service in cooperation with the company at a cost of $.046 per M. feet to the Forest Service and $.001 to the company.

Not over 5 per cent of the reproduction was destroyed. A very small amount of natural litter and ground cover such as leaves, pine needles, and fallen timber was removed by the brush burning. Brush cut and piled in September, 1922, burned up clean in March, 1923.

After experimenting in all of the different seasons when burning was possible it was decided that the best results were obtained in the early spring just before all of the old winter snow was gone and just after a light spring snow had covered the patches of bare ground.

Burning was found possible during the rainy season of the summer months but not practicable on a large scale. Where it is deemed necessary to burn fire lines during this period it can be done successfully. If it were possible to predict the weather with any degree of certainty for several days in advance burning on a larger scale could be practiced, but often even during the rainy season several days will elapse with little or no rainfall. If a large area is set just prior to such a dry spell, an extra cost will be incurred for patrol work.

Burning after the first snow in the fall was not found feasible. Either there were several small snowstorms early with the snow remaining only a day or two, or when the snow came later in the season it fell to a great depth with the first storm and remained throughout the winter.

For the best results the brush should be piled green and as soon after felling as possible. The piles should be uniform in size, not over six feet in height and eight feet in diameter. Too much emphasis cannot be laid on the construction of good piles. A well-made, compactly-built pile will burn and be entirely consumed when a loosely-constructed pile cannot be ignited. Care should be exercised in placing piles so as not to get them too close to living trees. Burning can be done on days of fairly high wind if care is taken in lighting the piles on the leeward side and letting the flames work back toward the windward side.

It is the writer's opinion after conducting these experiments in brush burning that it is entirely practicable in the Southwest and that, therefore, the brush disposal problem in western yellow pine in Arizona and New Mexico is solved. There remains now only the necessity of educating the forests in the technic of brush piling and burning. This conclusion has been reached after much experience in other methods of brush disposal practiced in the District.

ANOTHER SPLENDID ACT OF COOPERATION

District Forester Morrell reports another splendid act of cooperation in the following letter:

"George Schmidt, a twelve-year-old Boy Scout of Philipsburg, Montana, on September 20, 1923, reported a fire near the city limits to a fireman on duty at Philipsburg. The boy was assisted in fighting the fire by Walter Johnson, Frank Martinage, William Schneider, and Clarence Johnson, all Boy Scouts, by the citizens of the town, and by the employees of the Philipsburg Mining Company, headed by their superintendent, Mr. Blitz. By the boy's prompt action in reporting the fire, and by the cooperation given in extinguishing it, one of the few remaining stands of mining timber in the locality was saved.

"A year ago a similar situation was handled by Mr. Peter Valiton, then Boy Scout Executive, who broke into the warehouse in Philipsburg in the absence of the Ranger."

The Forester has written to George Schmidt to thank him and his friends for their actions. The Forester has also asked District Forester Morrell to convey his thanks to the citizens of Philipsburg and to the Philipsburg Mining Company, as well as to Mr. Peter Valiton.--Ed.

NATIONAL FIRE PREVENTION EXPOSITION

By H. N. Wheeler, D-2

The Fire Congress and Exposition held in the 71st regiment armory, New York City, during Fire Prevention Week, October 8 to 13, was the beginning of what portends to be an interesting annual affair.

The fire chief of New York City, Paul D. Kelleter, Director of Purchases and Sales, Department of Agriculture, and other men prominent in the fire game, delivered interesting papers before the congress, and the moving picture theater was crowded at all times with people interested in seeing fires and the measures used in suppressing and preventing them. Talks on various phases of the fire situation were distributed each day or night from the Radio Corporation of America sending station to an estimated audience of 800,000 people throughout the United States.

The exhibits displayed all manner of fire prevention devices, such as a fireproof safe, a composition wall board, various fire alarm signals, and excelsior and other highly inflammable material treated with "No Fire" - a liquid that makes even gasoline immune to fire.

The Forest Service display, consisting of enlarged photographs, a fire lookout house, a model of a lookout tower, a fire tool box, and a pump used in extinguishing ground fires, attracted much attention. Many remarks were heard to the effect that it was the most interesting exhibit in the hall. School teachers were there, some of them with their pupils, and many were the inquiries for literature and more information about the forests and how and why forest fires start. Most of the people were unaware that there are National Forests in the East but thought of them as being confined to the far West.

It is planned to make the Congress and Exposition a much more elaborate affair next year and start it off with a parade by a part of the New York City fire department.

COL. HENRY S. GRAVES APPOINTED PROVOST OF YALE UNIVERSITY

The election of Henry S. Graves, Dean of the Yale School of Forestry and former Chief of the Forest Service, as Provost of Yale University has been announced. Col. Graves will continue as Dean of the Yale Forestry School.

In the position of University Provost, Dean Graves will be second to the President of the University in administrative rank. He will assist the President in matters affecting Faculties, Departments, Divisions and Deans, and in the preparation of the instruction budget. His chief duty will be to present to the University Corporation and its committees the views of the faculties and the teaching staff on all questions affecting the educational policy of the University or its various schools and departments. The Provost is consequently the connecting link between the various schools and departments and the corporation of the University.

Col. Graves is President of the American Forestry Association, Fellow of Society of American Foresters, Vice-President of the Section of Social & Economic Sciences of the American Association for the Advancement of Science, Chairman of the Division of States Relations in the National Research Council, a member of the Joint Committee on National Resources of the National Academy of Science, National Research Council and the American Association, an honorary member of the Royal English and the Royal Scottish Aboricultural Societies, a member of the Societe Forestiere de Franche Comte d' Belfort, member of the Society of American Military Engineers, and a member and officer in numerous societies and organizations for the advancement of forestry and kindred subjects.--M.H.

DO YOU BELIEVE IN SIGNS?

By L. F. Kneipp, Washington

Upon some National Forest camp grounds one, without moving in his tracks, can count a dozen or fifteen signs bearing injunctions regarding care with fire, good sanitary practices, promiscuous shooting, mutilation of trees or shrubs, washing in creeks or springs, etc., etc. Hoary veterans of the forest bear on their shaggy trunks entire series of large yellow posters, frescoed with red-letter slogans, and look like old men sporting fancifully decorated chest protectors. Others contain two, three, or even four signs, sometimes of varied portent but often similar in subject if not in wording.

The wide variety of Service signs frequently is supplemented by signs or posters of the State Game Departments, Sanitary Commissions, and other agencies. The result moves hardened veterans, such as the Chiefs of Lands in Districts 5 and 6, to loud outbirsts of disapproval and great activity in removing some of the offending pasteboards. Anon, the official flivver is stopped at points along the road where the face of Nature is covered with a rash of vari-colored posters so numerous as to defeat the purpose they are designed to serve. Elsewhere, the same face is totally unmarred for miles and miles.

The query presents itself: Is the sign and poster business being overdone? Or have we merely failed to develop the care and good taste essential for a proper use of this form of public education?

WASHINGTON NOTES

Isn't There a Good Idea Here? A New York State College of Agriculture press release of June 28, 1923, entitled "These Boys and Trees Will Grow Up Together," tells how in Canandaigua, N. Y., a troop of Boy Scouts has undertaken forest planting and improvement cuttings on 80 acres of abandoned farm land. The land has been leased for 10 years and will serve as a permanent camp site and a place for the practice of forestry.

There is perhaps an idea here that might be worked out in somewhat different form for Boy Scouts elsewhere. Why might not Boy Scouts from a city obtain permanent camp grounds under an agreement with the owner by which they would plant land in need of reforestation, and also conduct operations for the improvement of existing stands, under some sort of agreement with the owner whereby receipts from cuttings and increase in the value of the forest would be divided between the owner and the Scouts?--H.A.S.

Zon and Sparhawk Get Good Write-Up: The Lumber World Review in its issue of September 25 had a ten-page review of Zon and Sparhawk's "Forest Resources of the World," embellished with photographs not only of the two volumes but of the two authors as well.

HOW TO HELP THE PRINTER

(Reprinted from The Official Record)

1. Manuscripts for the printer should be the first sheets of copy, not carbon copies. The first sheets are much plainer than the carbon copies, and the latter, being usually on thin paper, are hard to handle.

2. All manuscript copy, including footnotes, etc., should be typed with the lines double spaced. It is very difficult to make legible editorial changes in single-spaced copy, and the printer objects to close-spaced copy.

3. Have left-hand margin of at least an inch on all folios (pages). Margin at top approximately 1¼ inches.

4. Do not allow paragraphs to run over from one manuscript folio (page) to another, but begin each new folio with a new paragraph. This will save much cutting and pasting at the Printing Office before the "takes" are distributed to different compositors.

5. Tabular matter should be on separate sheets, as tables are not given to the same compositors as the text matter.

6. Folios on which tables are typed should be not over 19 inches wide, as sheets wider than this cannot be conveniently handled by the compositor.

7. Bring the paragraph to a close at the point where the table is to be inserted, and continue, with a new paragraph, on a new folio. Then number all folios consecutively, including tables, in their proper position.

How the Mighty Hath Fallen: Evan Kelley, the well-known bachelor of pencil fame, has at last taken a course in efficiency. The course is for life and is to be given by Mrs. Evan Kelley. The marriage took place on October 10. The Forest Service extends its heartiest congratulations and best wishes.

FOREST EXPERIMENT STATIONS

Dr. Zon Makes Notable Contribution to Science: One of the first contributions from the Lakes States Forest Experiment Station came, and rightly so, from Director Zon in the form of a talk before the Michigan Hardwood Lumber Manufacturers' Association. This address, among other things, contained one particular deduction which will endear itself to all who are acquainted with Dr. Zon and the Great American Game. However, despite Zon's eminence as a forester and his great experience with the Great American Game, it is hoped that his allegation will not prevent the field force from continuing its research activities to find the best way to handle the pasteboards.

Dr. Zon's address will be found in the Hardwood Record and the deduction alluded to is: "It takes a jack pot forty years to reach its full size."

DISTRICT 1 - NORTHERN DISTRICT

Glaciers Found in the Bitterroot Range: In a recent trip of several days into the Bitterroot Range near the heads of Big Creek and Kootenai Creek, Theodore Shoemaker and K. D. Swan claim to have settled the question of whether or not there are active glaciers in the Bitterroots. On the northeast slope and near the summit of what is sometimes called the Heavenly Twins is a real glacier about one-quarter mile in length and several hundred feet in width. An immense moraine of comparatively recent origin forms a half circle around the lower side and both ends of the glacier. It is now distant some four or five hundred feet from the present edge of the ice, indicating that the glacier is receding quite rapidly.

Two smaller glaciers are found within a half mile to the eastward toward St. Mary's Peak, all draining into Kootenai Creek. What appeared to be a glacier of considerable size was also observed on the east slope of Castle Crags some five or six miles farther south. A good many photographs were taken for use in illustrating an article on that region.

Are Pine Squirrels Carnivorous? "Having spent some time watching pine squirrels feeding, I find they are not strict vegetarians as I had always supposed.

"The first case that came to my notice was at the Foxpark Ranger Station where I saw one tearing the dried tissues from what appeared to be the shoulder blade of a cow or horse. On first noticing it I thought it was eating lichens from a rock so I became interested and watched it until a pair of angry robins put it to flight and then I discovered the truth. Later the same day while on lookout at Somber Hill I saw another squirrel eating lichens from a rock; watching it further I saw it take on a feed of considerable proportions from plants and grasses which I could not fully identify. Then for a chaser it picked up some twelve or fifteen small red ants and then, as if to take the taste from its mouth or put out the fire, it picked up a perfectly dry piece of wood and ate off of it for a time.

"I would like to hear from some one else regarding the habits of these squirrels."

Guard Geo. Howard, Medicine Bow.

The above article in the District 2 Bulletin came to my attention two or three days after I had been told of another incident in support of the contention of Mr. Howard that pine squirrels are sometimes carnivorous.

While at Seely Lake recently, Mr. Frank Borg, a jeweler at Missoula, told me that he had just seen a pine squirrel catch, kill, and devour a young robin. William Dickinson, a business man of Missoula, who was with Borg, stated that he had seen the squirrel consuming the robin after it was killed.

I, like Mr. Howard, had always supposed that pine squirrels were 100 per cent herbivorous, but Borg and Dickinson are men whose word cannot reasonably be questioned, and they were entirely sure of the facts as stated.--I should like very much to see further comment from anyone who has made similar observations.--Fred Morrell.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Boys' and Girls' Forestry Club: One of the most interesting features of the 1923 Colorado State Fair was the boys' and girls' club work. These clubs are organized for the purpose of studying the problems which are of greatest importance in individual rural communities of the State. Demonstrations are given every year at the fair of the lines studied by each kind of club during the preceding year. Of special interest to the Forest Service is the work of the Crestone Forestry Club which, this year, was represented by a team of two girls.

At their demonstration, they identified a number of poisonous range plants, explained how they could be recognized, and told as much as they had been able to learn from authoritative publications about the effect of these plants on livestock, how to recognize the symptoms and give relief to the stricken animals. In addition, they explained the method of fire protection organization which is in effect on the National Forests of Colorado and the place which should be filled by the average citizen. They showed a very good conception of the subject with which they dealt and indicated to those interested in forestry the value of this means of securing a public understanding of the work and aims of those concerned with the perpetuation of the Forests in this region.

DISTRICT 3 - SOUTHWESTERN DISTRICT

A Change of Views: From time to time the District has received numerous petitions requesting eliminations from Forests. A petition has just been received signed by seventy-nine citizens in and around Willard, New Mexico, protesting against the elimination of the north end of the Gallinas Division. This petition in part states: "Said Forest is a protection as a watershed to the surrounding country and is now beneficially used as grazing and timberland by the people of the community and the same is not suitable for homes or homesteads in any size tracts permitted by the laws of the United States, and that much other land is available and unused as homesteads for settlers on the public domain, and that the population of this country has steadily decreased over a period of many years, and for the further reason that homesteads taken up near the proposed elimination have been deserted or proven up on and mortgaged to the Government Land Banks or some one else." The petition indicates that the settlers have begun to analyse the use which is being made of lands in their vicinity. Within a short distance of the proposed elimination a short time ago a similar petition was circulated advocating the elimination of lands of the same character and stating that to retain such lands in the National Forest was preventing their highest use. It now appears, however, that the former view is being abandoned.

Timber in Mexico: The lumber industry of Mexico is of growing importance, but there is still room for development. According to the estimates of lumber producers and dealers, the production of lumber in Mexico is now approximately 750,000,000 feet. It is predicted by some large lumber producers that the Mexican production will soon exceed the demand and that it will be necessary to engage in export. There are believed to exist in Mexico about two hundred varieties of wood, but by far the greater part of these is of very small importance in the lumber industry. Pine is probably the most important wood, as it grows in a great many parts of the country.

The Forest Service at Raton: In cooperation with the Biological Survey and the Bureau of Public Roads, the Forest Service had an exhibit at the Northern New Mexico Fair at Raton on September 11-14. Messrs. Dwire of the Carson and Cook of the District office, who represented the Service, were able to explain Forest Service work to a large and interested audience. The exhibit centered about a large model with painted background showing the results of forest fires. Another interesting model showed a developed and undeveloped water hole, by the help of which the Forest Officers explained the advantages of range improvement. The remainder of the Forest Service exhibit consisted of pictures and charts showing forest activities. A feature of the exhibit was the free moving picture show which was each day given at a prominent place in town. The Bureau of Public Roads exhibited models of roads, charts and pictures, while one of the interesting features of the Biological Survey was a live collection of New Mexico rodents. Both of these bureaus were ably represented.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Aspen Looking Up: All of the central Utah Forests are blessed, or cursed, with vast amounts of aspen timber. There never has been much sale for this class of material, although at one time, about ten years ago, there was a big demand for aspen mine props which later practically disappeared. Now there is a proposition on foot for making fruit baskets for the central Utah fruit growing region, from aspen to be secured from the Uinta and perhaps the Manti National Forests. Several test baskets have been made up, using aspen veneer which has been cut in the east from Utah logs as an experiment. These baskets are very satisfactory and it seems probable that a small fruit basket factory will be established in Springville, Utah. The plan is to make the heavier parts of the baskets, and also fruit boxes, from the veneer cores. There is a small excelsior factory now in operation in Salt Lake City which is using aspen from several of the central Utah National Forests. We can guarantee a long life to both of these industries, as we can undoubtedly grow aspen about a hundred times as fast as they can cut it, unless they get too prosperous.

Timpanogos Cave: A legal battle is brewing over Timpanogos Cave, the final round being set in November. The area upon which Timpanogos Cave is located is covered by several mining claims. It is generally believed that the claims themselves do not amount to much and that their chief value lies in their control of the cave. Although this cave has been made a National Monument, the action was later than the filing of the mining claims, which constitutes a prior right if they prove to be valid claims. There is a great deal of local feeling in the matter, as the public feels that this wonderful cave should not fall into private ownership on account of its being upon a mining claim.

DISTRICT 5 - CALIFORNIA DISTRICT

Fire Prevention Signs on Trains: Through the cooperation of the Southern Pacific Railway Company, fire signs are now to be found in all smoking and observation cars throughout the system. These signs, which are neatly framed and prominently displayed, read as follows:

> "Help Prevent FIRE. Do Not Throw Burning Tobacco or Matches Out of Open Car Windows or Doors or from Platforms of Trains."

Stovepipes and Lightning: It is a good thing to keep stovepipes away from telephone lines. During a heavy electrical storm in the Bogard District the latter part of August, a tree was struck by lightning, upon which a telephone line bracket was fastened. The lightning left the tree and followed the telephone line to the Bogard Station cabin where it blew the fuse into a thousand pieces, welded the block in the protector and burned out an extension bell. A few days before the storm a tent had been put up near the line, the stovepipe being within about five feet of the wire. A portion of the electric charge evidently jumped from the telephone line to the stovepipe. One of the road crew was sitting with his knees against the hearth of the stove and received a shock that threw him six feet from the stove. The stroke seemed to have connected up with his legs where they were resting against the stove. A red streak extending from his knees to the soles of his feet was the only scar made. The man suffered great pain in his legs for several hours but was able to fight fire the next day.--W.G.D., Lassen.

Slash Disposal Experiment on Stanislaus: The slash disposal experiment on the Standard Lumber Company sale of the Stanislaus, where intensive fire protection has been substituted for piling and burning the brush has been quite successful this season.

The protection force has comprised one lookout and two patrolmen. Two men have been employed throughout the season to pile brush on a strip about 100 feet in width above and parallel to the railroad. The brush on this strip will be burned this fall. These brush pilers have also cleared fire lines from 4 to 8 feet in width along donkey trails so that the logged off area is divided into blocks ten acres and less in area.

There were seven fires on the sale area this season. With the exception of a 10-minute get-away in one case, this record varied from less than 1 to 5 minutes. The record of travel time ranged from 1 minute to 22 minutes. Control record varied from 4 minutes to 1 hour and 22 minutes. Five of the fires comprised a total of about 5,000 square feet. The sixth covered about 1/10 acre and the seventh 1/2 acre. The total burned area was a little less than 3/4 of an acre.

Scaler William S. Price, who has had charge of this sale, reports that the Evinrude pump proved to be very effective in control work on three of the fires. One of the fires was controlled very readily and two of them were completely extinguished by means of the Evinrude.

DISTRICT 6 - NORTH PACIFIC DISTRICT

They are Seeing a Light: In the box of one brand of matches of the Diamond Match Company there is now carried a cardboard slip on each end of which this appears:

"Never Neglect Precautions. Put Out Your Matches and Your Smokes Before Throwing Them Away."

Bulletins in Demand: At the State fairs at Yakima, Wash., and Salem, Ore., this year 90 persons left their names and addresses in a National Forest register in the Department exhibit requesting that copies of 235 different Farmers' Bulletins be sent them.

More of This is Needed: Through the efforts of Ranger J. W. Lundin, the McClellan Hotel at North Bend, Wash., is carrying this year on its stationery and envelopes a rubber stamp reading: "Leave a Clean Camp and a Dead Fire."

Service Bulletin

U. S. FOREST SERVICE

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ARE WE PROUD OF OUR GRAZING RECORD?

By Stanley F. Wilson, Datil

In contrast to our usual complacent stories on how we have won the confidence of the western stockmen and why we should administer the Public Domain, E. L. Perry's article in the Service Bulletin of September 4 is distinctly refreshing.

One of my earliest Forest Service recollections is the statement of a grazing permittee that "The Forest Service would be all right if it would only enforce its own regulations." It is true.

Take our trespass procedure as the horrible example. After a few years' experience with grazing trespass and contact with other field men having similar experience, one must inevitably become impressed with two facts: that the trespass situation is a serious proposition both as it affects the forest user and our own personnel, and that our policy is woefully weak and inadequate.

Some of us delude ourselves into thinking that the importance of trespass is greatly exaggerated by the field man and cite records to show that the number of stock found in trespass over a period of years is very small as compared with the number grazed under permit during the same period. The fact is overlooked that only a small portion of the trespassing stock is ever reported. At best it is impossible to catch every offender every time. Under present procedure a trespass case is an expensive luxury and no Ranger district or Forest can afford to have many important cases if much other work is to be accomplished. A rough estimate of the expense on a small case started on this Forest last October and still pending shows $300 real money spent, 1,100 miles traveled, and more than 30 days of ranger time used. No District office expense counted. Profitable results to date - none. And then we talk about pencil waste! Under present procedure we actually have not the time nor the money to push even those cases with which we can catch up. After a few disastrous experiences it is a little hard to have the inclination. Even if the amount of unpunished trespass was as small as some think it, the matter would still be of great importance because of its effect upon other permittees and upon the Service personnel.

In my opinion Perry scored heavily in his remarks on the collection of evidence. There are times when, with the aid of a little luck, we can secure all of the evidence needed, but I can pick from the files cases against really shrewd offenders (whom no one can doubt are guilty) where I will defy anyone to show how sufficient evidence of the kind demanded could have been obtained without the expenditure of a great deal more money than the Forest Service has to spend.

In the main, trespassing has paid the trespasser and continues to do so. In the nature of things he can only be caught occasionally. Actual damages for the number of stock for the periods we can prove trespass amount to less than the grazing fees for the stock and periods actually grazed. Often he grazes numbers of stock which could not be permitted and on a range where they could not be allowed. If he trespasses because he is badly in need of range he can afford to pay some punitive damages if he has to (it is at least a sporting chance that he will not) and still come out ahead. Due to our mawkish reluctance to be severe with the trespasser, the square permittee, whose range he eats out, has virtue for his only reward.

My point is that the present trespass policy is unsatisfactory, inadequate, and unsuccessful. A great many field men are disgusted. Higher-ups cannot see why. Which are at fault is only of interest in seeking a remedy. What I wish to question is why we need to go to Court (except in injunction and large damage cases) and why we must insist upon tying our own hands when we attempt administrative action. Sure and adequate preference cuts for minor offenses and prompt revocation of permit for flagrant ones could be made to solve our problem. Why do business with people who won't play fair?

Suppose we said to each permittee at the beginning of the grazing season: "Here is your permit for so many head of stock. For your protection we are going to make war on the trespasser. We can't check up on all of them at once, but just as soon as we find anyone with an unreasonable amount of excess stock we are going to cancel his permit and make him move his stock." Suppose we caught up with only three or four of such cases per year per Forest (this would not be difficult where I have worked) but in each case made our word good. How long would it take to clean up the trespass tangle?

I am not stirred up over some one particular trespass case. My views are cumulative since 1914 on two Forests. I can go to either the open or closed files here and find a number of cases that we would all like to hide. Ask any Ranger!

CONTACTS

By R. D. Forbes, Southern Forest Experiment Station

An experiment station, like a good child, is popularly expected to be seen but not heard. Research men, if they appear in the movies at all, figure as pale recluses in a laboratory. But since modern children are no longer good, and because the movie industry holds all American records for lying, the Southern Forest Experiment Station refuses to conform to type. Compared with the contacts which the average National Forest organization has with anything but the local public, we think our outside interests fairly broad, and mean to increase their breadth. They need to be broad, for in our territory of 1,100 by 400 miles there is probably less than one per cent of the land in public ownership. To learn things that will be applied on only one acre out of a hundred does not appeal to us as the height of ambition. We plan to do better.

First we must learn something, however. To this end we now have a trained man more or less permanently located at each of three field stations. Here are our first contacts with the public. At Starke, Florida, we have a 5-year agreement to work a thousand slash pine trees in a private turpentine orchard under any experimental methods we like, turning the gum over to the timber owner. On 500 longleaf trees in another private orchard we have a 4-year agreement. At Urania, Louisiana, we have just been given a 30-year lease on 1,500 acres of private land, and the owner has thrown in fire patrol for good measure. At Bogalusa, Louisiana, we are now negotiating a lease on 200 acres, with the promise of more if we want it. Across the Pearl River in Mississippi 65 head of cattle belonging to another bureau of the Department of Agriculture graze on a lease of ours under cooperative agreement. Here are relationships whose value cannot be overrated. Those who have entered into leases, agreements, or cooperation with us are our friends and will profit by what we learn.

In the meanwhile, our headquarters tries to keep in touch with the world that owns the 99 per cent of Southern forest land. Already the world begins to seek us. Inside of half an hour the other morning four different parties rang us up to know where and what the Sitgreaves National Forest is. They had read of its having a turpentine lease to offer and knew we could tell them something about it. The Delgado Trades School of New Orleans is planning to put in some modern dry kilns under the direction of the Forest Products Laboratory, and out of their action may grow cooperation with the Laboratory which will be of enduring value to the South's lumber industry. It was the Experiment Station that interested the school and the laboratory in each other. From the Turpentine and Rosin Producers' Association and the Georgia-Florida Sawmill Association came not long ago simultaneous appeals for aid against a mysterious destroyer of standing timber in Mississippi and in Florida. The men at Bogalusa and at Starke investigated and reported:

"Bugs!" Now there is every prospect that the Bureau of Entomology will have a special man in the South this winter, and our cooperation in stamping out a serious and widespread beetle infestation is being sought and given.

Thus are being built, quietly and enduringly, the contacts and the recognition which will enable the Station in future years to devote nearly its whole time to its real job - forest research.

FOREST EDUCATIONAL WORK

By Charles H. Shinn, D-5

One of the most important things in the daily work of a forest man is that of being a teacher and helper of young and old. Part of it often means "getting into print" now and then. Shortsighted unimaginative people often think of this as merely advertising one's wares - "selling" forestry, with big headlines and a brass band. The main objection to that sort of publicity is not that it is cheap and vulgar, but that it always does harm, both to the individual and to the cause.

The most valuable publicity work is rooted in knowledge of your subject, of the people of your community and of the objects to be attained. Every forest officer is doing it more or less all the time without knowing that it is publicity.

Let us first mention newspaper items. All of us can furnish them to whoever writes such items for print, but they must be done rightly. Suppose, for instance, that I am at Auberry with the Supervisor, and I hand in this as an Auberry news item: "The Forest Supervisor was in town yesterday." This item is worse than useless; it tells nothing worth noting. But suppose the item says: "Forest Supervisor________was in Auberry on June 1 with Mr. Peterson, millman of________, on their way to the advertised timber near Dawn, where about four million feet of timber on_______acres has been put on the market."

Never write an item for print without thinking first of the fellow who reads it. Give him the facts in plain English.

The busy Ranger does not write so many news items in a year. He meets strangers, and if he is chock full of love for and knowledge of the region, he instinctively tells them just what they wish to know; he becomes "guide philosopher and friend" so that he puts over his knowledge and ideas, and for years to come these strangers spread abroad that Ranger's ideas to the very ends of the earth. In order to do this, the great thing is to be an all-around man, well posted and absolutely devoted to the work - hence such "schools" as the one on the Sierra each winter.

Further, suppose that a Ranger knows, likes and is in touch with the children of his neighborhood, drops into the schoolhouse now and then for a little talk. He can start ever so many children on the right road, not only in the principles of forest development and protection, but in knowledge of the trees, shrubs, flowers, birds, animals and all sorts of worth while outdoor things - can start the school making collections and can make these youngsters the most useful friends of the whole Forest game, so that they really count it a privilege to live where they do.

ON COLLECTING PLANT SPECIMENS

By Leland S. Smith, Modoc

After having spent a month in Washington on detail to the office of Grazing Studies, I feel that a few words on collecting plant specimens for identification will be opportune.

I have noticed a number of the collections have been in excellent shape, while a few have been very poor. I never realized before coming to Washington how I might have expedited the handling and identification of my collections until I had worked for some time with Mr. Dayton. I have always tried to get my plants in proper shape but when in a hurry, have not been as careful in pressing and taking care of the plants afterwards as I should habe been.

What is true for my collections is likewise true for some of the collections I have handled while here. In some cases it would appear that the collector's aim has been merely to get a bunch of forage plants to send in for identification and, having stuck them between blotters, he seems to have felt that he had done all that should be required of him, with the result that the plants are poorly pressed, flowers are faded, broken or gone, and accurate determination of species is rendered difficult. Even when this is not true, it is often found that plant specimens are meager, essential parts are lacking, and Forms 767 imperfectly or improperly filled out. This not only lessens the value of such specimens but necessitates extra work on the part of the Washington office force and the persons making the identifications. This extra work in the Washington office is largely responsible for the delay in reporting on plants and publishing of notes. Any time saved reacts to the benefit of the collector.

The need for uniformity in methods of collecting, pressing, and assembling plant collections by field officers is not realized by many collectors. I believe much time could be saved here, and the needs of the field men and District offices more fully taken care of, if definite instructions were included in the Manual prescribing in detail how plant material should be taken care of, and what material should be sent in. By this means only properly pressed specimens, consisting of plants with roots, as well as stalks and flowers or fruits or both, would be sent in.

It may be said that Forest officers already have suggestions and instructions on collections and preparation of material, but such "instructions" are in the files and are not mandatory. I feel that instructions in regard to plant collections should properly be in the Manual where they may be readily referred to.

NOTES ON FOREST ROADS AND TRAILS

By T. W. Norcross, Washington Office

Using information furnished by the District Foresters and obtained from other sources, considerable data on the Forest Road and Trail work have been compiled and are now available for use. At more or less regular intervals, extracts will be inserted in the Bulletin.

In the opinion of the District Foresters the Forest Road System should be 35,330 miles in length. Trails aggregating 36,279 miles in length are considered necessary. Of the Forest Roads, 13,507 miles or 38 per cent should be placed in the Forest Highway Class. The remainder will then be in the Development Class. The estimated cost of completing the construction and improvement of Forest Highways up to the required standard is $119,846,912; for Forest Development Roads $47,345,054 and for Trails $10,700,347, thus making a total of $177,892,313 to complete the system of roads and trails which is needed now or will be needed within 10 years.

* * * * *

TRY THIS ON YOUR PIANOLA

(Tune: My Bonnie Lies Over the Ocean)

"My tYpust is oi hor vacution,
My trpist's awau fpr a week,
My trpudt us in hwr vacation.
Wgile thse damu kcws play hudge and seek.

Cjoras:

"Oy, breng boxk, bting bzek,
Brung becj mu bOnnie ti my, tp mr;
B(&ng b$xj, b6nh, bicx,
Pjing bozk m% beinino-o mx; Ch
Helk?"

--Disston Crucible.

WASHINGTON NOTES

Mattoon Giving Plantation Demonstrations in the South: W. R. Mattoon of Forest Management is now in the South supervising the establishment of about 15 demonstration plantations of slash pine seedlings in Georgia and South Carolina. This line of reforestation appeals strongly to landowners in the South because it promises profitable utilization of large areas of land now idle.

The boll weevil and a shortage of labor have caused abandonment of thousands of acres of cotton land, most of which has thin soil but which is well adapted to the rapid growth of southern pines. It is recognized by landowners that no labor is involved, comparatively speaking, after the crop of pines is once planted.

These plantations in all cases are to be located along public roads where they will be of the greatest value from an educational standpoint. Seedbeds for growigg seedlings of shortleaf, loblolly, and slash pines are also to be established. All of Mr. Mattoon's work will be done in cooperation with State Colleges of Agriculture and their extension forces.

Compilation: "compilation," the gathering together of material borrowed or transcribed from manuscripts or books written by others.

Did you ever write a report on some silvical topic, gather a lot of figures, or in other ways prepare some data of which you have lost all record? If so, the chances are that this report is now hibernating in the Compilation files in Washington. Should you need it and are able to tell us just what subject it was written upon and its approximate date, it would be relatively easy to find it. Some 15,000 or more manuscripts, reports, and tabular material of all kinds are now carefully filed in the Compilation archives and are constantly being referred to by members of the Service who desire to know such things as "Have you a translation of Mayr's Waldbau?" These manuscripts and reports cover practically every species and every subject in the range of forestry topics from sowing seed to a survey of the timber resources of a State, and include reports dating back as far as 1900, as well as of 1923. They include those written by forest guards as well as by the Forester, and by men in Florida as well as in Alaska. So, if you have occasion to need one of your old reports and are unable to find it among the local records, you now know where it might be found.--E.N.M.

FOREST PRODUCTS LABORATORY

Apple Box Exhibit: An exhibit showing important principles in apple box design, which is to be installed by officers of the Crater National Forest in the new permanent forestry building at the Medford, Oregon, fair grounds, was recently prepared by the Laboratory.

This exhibit consisted in part of seven standard sized apple boxes of different designs showing, by means of charts attached to each box, the influence of various details of design on their relative serviceability. The comparisons shown on these charts were based on the results of previous tests of apple boxes made at the Laboratory in cooperation with the Western Pine Manufacturers' Association.

Getting Worried About the Sawdust Cattle Feed: The news stories about sawdust for cattle are worrying some of our farmer friends. Here is what one man wrote to District 6: "Since reading that article it seems to me there is no need of experimenting on sawdust when all grains grow in abundanze something that should grow for the use of food. There is no doubt that all those adultrations are ingenerous both to pelple and stock. We can not afford to pay a fancy price for sawdust and loose our stock also study out how that kind of feed effects them before you see it go on the market. Hoping you will take this up for the benefits of the farmer."

Other farmers occasionally make inquiries about a nearby pile of sawdust they want to convert into usable feed.

State Forest Research: It will probably cause some surprise to many in the Service to know that forest research is being carried on by many State agricultural colleges, including a number of the forest schools conducted in connection with these institutions. The Department of Agriculture has just issued a summary of these projects which shows that there are something like 82 projects in 20 States. These projects are divided into the following fields:

Basket Willows: Alaska, Oklahoma, Michigan.
Woodlots: Pennsylvania, Ohio (2), Iowa (2), Idaho.
Grazing and Fire Damage: Iowa (2), Louisiana (2).
Thinnings: New Hampshire, New York.
Yields and Volume: New York, California (3), Minnesota.
Nursery Practice: Iowa, Kansas, New York, Ohio.
Planting: Mississippi, Ohio (3), Iowa (9), Minnesota, California, North Dakota, Porto Rico, Montana, Idaho, Michigan, Pennsylvania, Texas, Kansas (2), New Hampshire (2), South Carolina.
Natural Reproduction: Vermont, Iowa, South Carolina, Michigan.
Windbreaks: North Dakota, Michigan, Minnesota (4), Ohio (2).
Cutover Lands: Minnesota, Ohio, Pennsylvania.
Lumbering: California.
Wood and Products: Iowa, Idaho, Pennsylvania, Colorado, Oklahoma, Minnesota (3), California (2).
Silvics: Pennsylvania (2), Minnesota (3), Vermont, New York (2), California, Maryland, Iowa.

New Hampshire Forest Protection Society Approves New Station: At its annual meeting at Plymouth, New Hampshire, on September 5 the Society for the Protection of New Hampshire Forests passed a resolution expressing its satisfaction with the increased opportunities for progress in forest research offered by the recent establishment of the Northeastern Forest Experiment Station.

The society pledged cooperation to the station and urged its enlargement adequately to solve the immediate and pressing forestry problems and also advocated a representative Forest Research Council which will act in an advisory capacity with the Experiment Station and other forest research agencies in the region.

DISTRICT 1 - NORTHERN DISTRICT

The Cost of Held Fire Line: Three years' accumulation of data on the cost per chain of held fire line has just been compiled. The term "held line" refers to line which was actually constructed and successfully held. While the data are probably insufficient to be fully convincing they seem to point to the following conclusions:

1. In general in this region on areas not previously burned, the unit cost of fire line is proportional to the density and volume of the timber stand.
2. Old burns give the highest cost per unit of held line of any type for which a good record is available.
3. The cost of held line in D-1 is, and will continue to be, relatively high because a large percentage of its fires occur in old burns and in the white pine type.
4. For all types an average of 67 per cent of the cost of held line is incurred prior to control of the fire.
5. Costs expressed in dollars are of little value for comparative purposes because of the fluctuation of the purchasing power of the dollar. Costs expressed in man hours are much better.
6. Considering the amount of labor involved in the construction of a chain of fire line it appears that the indicated costs are excessive and that it should be possible to reduce them by good administration.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Signs of Public Cooperation: Incidents are occurring from time to time which go to show that public cooperation in fire suppression is gaining in size and momentum like a snowball. It will not be long before we have the public in the vicinity of the National Forests as enthusiastic about the fire prevention game as are the Forest officers themselves.

The latest incident of this kind to come to our notice: Some time ago Mr. W. D. Beardshear, Woods Superintendent for the Homestake Mining Company, was driving in his automobile along a highway in the Forest, accompanied by a Government official from one of the Interior Department Bureaus.

The Government officer thoughtlessly threw away a cigarette without first extinguishing the fire. Beardshear promptly slammed on the brakes and began backing up. Mr. Official inquired the reason for his action. Beardshear said "I am going to see what became of that cigarette you just threw away. I could not rest easy if I went on to town without making sure that it is not going to start a fire." The official was quite nonplussed and said that he had thrown away the cigarette without a single thought as to the consequences that might happen from such an action. He praised Mr. Beardshear for his thoughtfulness, made a resolution never to do such a thing again, and said he would immediately circularize all men employed under him in Government work calling their attention to the need for care with fire in the Forest, and particularly care with their tobacco.

Many Black Hills residents are now making it a practice to carry a can or tin box fastened in the car just under the driver's seat where they deposit ashes and cigar and cigarette stubs, matches, etc., when smoking while driving.

These signs that the public is waking up to the fact that fire prevention is everyone's business show that our fire propaganda is getting across and are a big incentive for more strenuous work in that direction.--G.A.D.

Department of Agriculture Exhibit at Colorado State Fair: The Forest Service was represented at the fair by an exhibit presented in cooperation with the Bureau of Public Roads and the Bureau of Animal Industry. The Forest Service concentrated its efforts on a fire exhibit. A canvas painting which was loaned to us by D-5 was shown with a natural forest built up in front of it. On one side of the trail was a protected forest showing a great number of advantages which come from the presence of green timber and on the other side of the trail was a forest depleted by fire. The contrast seemed to impress the spectators who, judging from their comments, carried away the very definite idea that they could not have what was shown on one side if they were willing to permit what was shown on the other.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Coconino Makes Large Sale of Timber: Contracts have been approved for the sale of the Dairy Spring Unit and Sawmill Spring and Morman Lake Units of timber on the Coconino to the Flagstaff Lumber Company. The estimated amount to be cut under the first contract is five million and under the second 81 million feet B.M. of western yellow pine. The stumpage price is $2.25 per M. Cutting on the former unit commenced some time ago under an emergency agreement. The average main line logging railroad haul for these units is thirty miles and 53 miles of spurs will be required. The annual cut is figured at 24 million feet. Two men are required to handle the operation for the Forest Service. The western yellow pine marking rules will apply.

Brush disposal varies somewhat from any Colorado Plateau contracts hitherto made. Sixty per cent of the brush is to be piled and burned, 25 per cent is to be lopped and scattered. It is planned and provided in the contract that the areas upon which most of the remaining 15 per cent is located, which means several sections, will be broken up by fire line upon which the timber is piled and burned. Except for the fire lines, the brush on this portion of the area will not be touched. The company will deposit a cooperative fund at the rate of 25¢ per M feet for the timber cut from the area, which fund will be used by the Forest Service for an intensive patrol and protection for ten years following the cutting of the timber. This latter method of handling the brush problem is entirely experimental in this District.

Weeks Law Aid for New Mexico: As a result of negotiations covering several years, the Secretary has signed a cooperative agreement with the State of New Mexico under the Weeks Law for Federal cooperation in the protection of State lands from fire. While the agreement specifies no set amount, it is anticipated that under the present fire protection system the State will receive about $800 per year under this agreement. The total cost to the State of their fire protection system (which is handled by a flat rate cooperative agreement executed last summer with D-3) is $2,762.

Taking Wood Without Permit Comes High: To the Datil belongs the honor for the first conviction under the State law for stealing wood from the Forest. On Saturday D. J. Jones of Magdalena was fined $25.00 and costs for stealing one load of wood from the Datil National Forest. The fine was suspended, since this was the first case in Magdalena.

Manzano Votes for Fabrics: Supervisor Kartchner of the Manzano says, "I'm off cord tires for mountain use and on roads used mostly by wagons on account of ruts. Tread is fine but bruises on sides of tires blow out much sooner than when fabrics are used." This confirms a verdict reached in the California District some years ago after an exhaustive inquiry into the subject.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

A Convert: Up in northern Idaho it used to be said that one of the most difficult men the Forest Service has had to get along with was Captain Robert Dollar. He objected to the Forest Service, their methods, and everything about them. An Ex-District 1 man was quite astonished, therefore, when he read the following article in the last issue of "The Timberman." "Captain Robert Dollar, President of the Portland Dollar Lumber Company, stated in a speech in San Francisco, 'I feel the time has come when the Government should step in and prescribe the conditions under which logging should be carried forward to prevent needless waste which has characterized it in the past. This waste must stop or the country will wake up some day in the near future without any timber. Reforestation must be carried forward. There is no time to lose.'"

Good Spirit: Assistant District Forester Ernest Winkler has been touring southern Utah recently and holding meetings with the stockmen to discuss reductions for range protection. This is a difficult subject to arouse enthusiasm upon among the stockmen. Nevertheless, the four wool growers associations with which he conferred agreed to good substantial reductions in 1924 and 1925. This will do much to solve the problems of our utilization of the range that have not yielded to less drastic remedies.

DISTRICT 5 - CALIFORNIA DISTRICT

Sierra Leads West in Power Development: Electric power sufficient for the needs of a million people was turned into the high power transmission lines leading into central and southern California when the generators of the giant hydroelectric plant in the Grand Canyon of the San Joaquin River were recently switched on. A total force of 105,000 horse power was hurled into the 220,000 volt transmission lines connecting the largest water driven electric power house in the Pacific West with what is said to be the longest high power transmission line in the world. The plant is the fourth unit brought into use in the Big Creek-San Joaquin project of the Southern California Edison Company, located in the Sierra National Forest.

The power from this plant will be distributed over some 300 cities, and is sufficient to accommodate 60,000 homes, 500 factories and to pump water for the irrigation of some 260,000 acres of land.

Quick Action: On October 3 the lookout man on Oat Mountain in the Saugus District of the Santa Barbara Forest reported a fire burning in a field at the edge of the brush to the dispatcher at Newhall at 10 a.m. A fire guard was started at once, with the result that he put out the fire, arrested the man who started it and brought him into Judge Miller's court at Newhall. The judge heard the case and fined the man, who returned to his ranch at 10:30 a.m.

Service Bulletin

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WHERE LIES THE RESPONSIBILITY?

By John McLaren, D-2

Reports from Minnesota indicated a serious fire situation about the middle of October. District Forester Peck and I went to Duluth, from which point we got in touch with Supervisors Marshall and Dahlgren and learned that all fires were out or under control, the most serious fire on the National Forests having covered 1,100 acres on the Superior.

We spent the next week with Weeks Law Inspector Hoar looking over State fires. Part of the peat bog country was traversed where fires were damaging roads and killing acres of spruce and tamarack timber. At Beaudette on the international boundary, residents were openly advocating fires which they claim are an asset in clearing land and settlers can be induced to come in faster if large areas are burned over.

Running fires were seen on several sides and close to Coleraine, but there seemed to be no apprehension felt. At Cohasset fires had burned up to the buildings at the edge of town. Whenever the wind whipped up the fire was fought half-heartedly, but as soon as it ceased all efforts were relaxed. At Remer the citizens sent a call to St. Paul for the militia to come out and help fight fires in that vicinity. A State ranger made a night ride down there, found lots of fire, but it had rained a little and there wasn't a man on the job - everybody had gone to bed.

Criminal apathy everywhere. The stage was all set for a holocaust, loss of life and property. A few more dry days, a little wind, and an army could not have stopped the fires. The "mental attitude" of the people in the cities as well as in the country must be changed. Being burned out and burned up won't do it. Broadcast propaganda may help, but if every State and Federal officer will constitute himself a missionary with a determination to make a change in the present attitude, results will begin to be apparent. First, concentrate on individuals, then on individual communities. Converts to fire protection can be secured if enough effort is made. Soon a part of the citizenry will enthusiastically take up the "lead" and the influence will spread in rapidly widening circles.

The present state of affairs should be a personal affront to every State and Federal officer with a knowledge of conditions. It should be a matter of chagrin to each such officer that with a personal responsibility for the protection of public timber resources, to say nothing of life and private property, we still find much the same attitude toward fire which existed prior to the 1918 horror.

Following the lines of least resistance, it is easy to damn the people for their listlessness and indifference. Suppose a different slant is taken at the matter. Presume the people hold this sentiment because they know no better. We are presumed to have detailed knowledge of the situation from all its angles. We do know better. Then is there any reason why we should not accept the stigma and the blame? Is there any reason why we should not personally, individually and collectively, say: I have failed to meet my responsibility? There is not - and when every Forest officer takes home to himself the blame for a continuance of this intolerable situation and acts accordingly, there is going to be a reversal of public opinion toward fire and an elimination of fire loss and damage.

IN RE CHRISTMAS TREES

By J. Roeser, Jr., Fremont Experiment Station

In passing through North Park, Colorado Springs, last December, I was made aware of another phase of this Christmas tree proposition which I had not previously thought of. Like most other towns of any pretentious size, the headquarters town of the Pike each year erects a community tree during the holiday season. Contrary to usual custom, however, a spruce tree about 20 ft. high and growing in the park was acting as the tree of honor, and I was rather struck with the spectacle of a growing tree decorated with lights and symbolizing Christmas cheer and spirit. On inquiry I was informed that this tree was transplanted the year before by the city for this purpose and was to be used thus in the future.

It is not my intention to remark about the cutting and marketing of trees for use in homes, since this matter has been plenteously discussed. I do think, however, that Colorado Springs has hit upon a scheme which is well worthy of emulation. Not all towns and cities have trees available or suitably located for this purpose, but there is no reason why the necessary steps cannot be taken to start such a tree by transplanting as soon as possible. I'm not only thinking of our Rocky Mountain region, but of the large cities of the Mississippi Valley and of the East. They all have convenient down town parks, or plazas; and one species or another of coniferous tree can be selected for any given locality. I think a permanent, living, community Christmas tree is far more capable of developing Christmas sentiment and interest than is a specially constructed tree, as one often sees, or a tree brought in from some far off forest, man handled, as it were, dead, and ready for the city dump in a few weeks.

A friend of mine remarked as we passed the tree: "There's Colorado Springs for you. Putting out a little tree like that." Yes, but he forgot that it was a "living" Christmas tree, a tree symbolic of what Christmas actually means to most of us humble Americans who profess ourselves Christians.

This is not meant for a sermon, but I believe that Colorado Springs is deserving of a bit of thanks for an unconscious, but nevertheless, real bit of forest conservation; meager in actual quantity, but immensely big in example.

FOREST FIRES MADE TO ORDER

By M. R. Brundage, Stanislaus

A gentleman came into the Supervisor's office the other day with the following request: "I would like to get about fifty small trees to be cut down, moved to a spot near the Brightman Flat Bridge, stuck into the ground again, and burned." Crazy? Oh, no. Just the advance agent for Jesse Laskey's Movie Studios. They buy anything for the movies, and he was shopping for a forest fire. He couldn't use any of the assorted conflagrations we had on hand, so he wanted the materials to make his own. The fifty-two trees were marked for removal, practically all fir and cedar from two to twelve inches in diameter and ten to fifty feet high. Since it is rather difficult to scale timber of this size, the trees were charged for at Xmas tree rates - 15¢ each up to twenty-five feet high and 25¢ each for trees over 25 ft. in height. The total value amounted to $8.70. Logging will be done mainly by means of man power from stump to road, thence by auto truck to the setting for the thrilling melodrama. Trees lifted bodily, limbs and all, to the shoulders of a dozen brawny men and carried from the forest with the tender solicitude of a mother for her babe. THERE'S method of logging that ought to satisfy even the Office of Research.

The story to be filmed requires a rocky stream, a narrow bridge, and a roaring forest fire. The bridge across the Middle Fork Stanislaus River, with its background of jagged ridges and heavy patches of timber, seemed to fill part of the requirements, but there was only a thick patch of scrubby manzanita and a couple of large yellow pines on either edge of the road in the foreground which would not look at all terrorizing to the average movie fan when flashed all aflame on the silver sheet, so the forest just had to be built up. The large trees will be wrapped in asbestos to the first limbs to avoid damage. A fire line thirty feet wide has been cut through the brush and fire extinguishing appliances of every description will be on hand to prevent the flame, which will last about two minutes, from getting away. Twenty-five bales of excelsior will be the principal source of flame and smoke while the camera men turn their cranks. Just what the plot is we don't know, but the title is "The Flaming Barrier," and there are numerous fire engines, villains, heroes and heroines mixed up in it.

Several features make this unique in the annals of Forest Service procedure, to wit: we can make out a fire report for Ed Kotok and tell him the exact acreage burned, the exact amount of damage, the value of contributed time, the length of fire line and all the rest of it BEFORE the fire occurs, and the report will be 100 per cent correct. We also claim that it is distinctive to sell Xmas trees in September and we now put in our formal application for the Everlasting Platinum Pointed "Kelley Pencil" as the Grand Prize winners in (a) collecting damages for burning of young growth under 12 inches; (b) collecting damages BEFORE the trees are destroyed, and (c) preventing fire scars on mature trees by the use of asbestos.

Fill your Pyrenes with water, boys, and let 'er go ahead--ly.

HOW CLOSE SHOULD RANGE BE UTILIZED BY THE CLOSE OF THE GRAZING SEASON?

By C. L. Forsling, Great Basin Experiment Station

How many can answer this question and know whereof they speak? The grazing meeting at Ogden last March expressed itself on this point to the effect that an average of from 10 to 25 per cent of a crop of the palatable species, evenly distributed, should be left at the end of the grazing season in the average year. The committee that presented the resolution, who thought they knew something about it, had originally placed the figure at 10 to 15 per cent. This was amended on the floor of the meeting to read 10 to 25 per cent, and passed with few, if any, dissenting opinions. It was recognized that the larger figure was to apply to range areas in need of improvement, where the species were not highly resistant to grazing, or in places where there was an erosion problem. This is undoubtedly a safe standard with sufficient leeway to meet most all cases.

Later the Assistant District Foresters in charge of grazing in the various Districts questioned the wisdom of the above decision as a whole and proposed to change this standard to 10 to 25 per cent of the herbaceous vegetation, adding the proviso, however, that "25 per cent of the palatable species be allowed to reach seed maturity" each year. The recommendation, except for the possible saving grace of the added proviso, is treading on dangerous ground since it disregards entirely the factor of the palatability or useability of the herbaceous forage and browse forage.

It so happens that the average palatability of the herbaceous vegetation on range types, on a great many Forests at least, runs between 50 and 75 per cent, a few, of course, running over 75 and now and then as high as 90 per cent, but the latter is the exception. Furthermore, various species of most any type vary in palatability from 0 to 90 per cent and occasionally 95, with the outcome that the more palatable species are taken closer than the less desirable ones as the type is grazed. Obviously, if grazing continues until 10 to 25 per cent of the herbaceous vegetation is left, the remaining herbage will consist of the less palatable, less desirable vegetation, and the better plants will be seriously overgrazed and eventually become depleted. Nor is there any saying what would happen to the stock if confined to the range until the vegetation is so closely taken. That there would be falling off in gains seems certain. Where heavy stands of poisonous plants occur the stock would be forced to eat more or less of it and losses would be heavier. Furthermore, if the 10 to 25 per cent of the herbaceous vegetation remaining is unpalatable there is no reserve forage whatever left for leeway as a safeguard in years below the average - a highly important matter where climatic conditions are variable.

It may be that turf forming species can be grazed closer than bunch grasses, but the amount of forage of the former class on National Forest ranges is so small, less than 15 to 20 per cent of the whole, that, speaking generally, they hardly come in for consideration.

Granted that there is some difference of opinion among Forest Officers as to the palatability of different species, it is safe to say that any wide divergence exists only among the less important plants. In so far as the more important species are concerned this difference, in the great majority of cases, is limited to a range of not over 10 to 15 per cent, and when a type is averaged the differences tend to compensate each other. At least this has been found to be the case in grazing reconnaissance.

Ten to 25 per cent of the herbaceous vegetation may be a good fire protection standard, but not so good from the standpoint of safety to timber reproduction. Reproduction of many tree species is often more palatable than the least desirable 25 per cent of the herbaceous vegetation and if the latter is grazed to that extent injury to the reproduction is bound to occur. In fact, in many instances injury to reproduction may be traced to utilization beyond the reasonable palatability of the herbaceous vegetation, even though the herbaceous vegetation remaining was considerably in excess of 25 per cent of the whole.

The lack of definite data for proof one way or the other is recognized and a project was added to the work of the Great Basin Experiment Station last winter to try to settle the matter definitely. It will be some time before this is worked out, but in due time we hope to know. In the meantime, however, it seems preferable to play safe, particularly when a standard can be figured by pretty sound reasoning and from experience. The basis arrived at in this manner is much closer to 10 to 25 per cent of the palatable vegetation than to that amount of the entire herbaceous vegetation.

TEAM WORK A LA SHERLOCK HOLMES

On October 19 three travelers found it convenient to make themselves at home in the Empire Ranger Station on the Pike National Forest. So well pleased were they with the station as they found it that they tried to take with them all movable articles and thus preserve the pleasant associations they had made with the Forest Service during their short sojourn. Unfortunately for them, Ranger Kelso came to the station the next morning with the idea of occupying it for a few days while cleaning up some fall work on that end of the district.

After a careful consultation with "Dr. Watson," it was decided that it had been necessary for the travelers to do some repair work on their car while stopping at the station. This proved to be the case and enabled Kelso to get their names and a pretty good description of them from a garage at Empire and from the postmaster. This description was broadcasted along the road both ways and soon resulted in the discovery of the culprits by Ranger Johnston and Lumberman McCallister of the Arapaho near Tabernash, Colorado. The cooperation of the sheriff in Grand County, where the party was finally located, was secured and careful watch maintained while Kelso and the sheriff of Clear Creek County hurried to the scene and proceeded with formalities. Several articles were found in their possession bearing the Forest Service brand. Therefore, the three travelers were taken to Georgetown, where they were lodged in the county jail to await the action and advice of the Assistant to the Solicitor.

Mr. Ise went to the scene of the theft on Monday, swore out warrants and took the culprits to Denver, where they are now awaiting trial before the Federal Judge on an indictment of larceny of Government property. Although fortune played into the hands of the Forest Service in the deal, the snappy team work of the Forest Service men along the road, together with Kelso's energetic efforts, were responsible for the success with which we met.

NOTES ON FOREST ROADS AND TRAILS

By T. W. Norcross, Washington

Of the 13,507 miles which the District Foresters recommend be included in the Forest Highway system, there are now 3,173 miles (23%) of roads of satisfactory type, 8,754 miles (65%) of existing roads of unsatisfactory type and 1,580 miles (12%) where there are now no roads at all.

For the recommended Forest Development system of 21,823 miles, the corresponding figures are as follows: existing and of satisfactory type - 6,075 miles (28%); existing but unsatisfactory 9,427 miles (43%); no roads 6,321 miles (29%).

Taking the system as a whole, our work is 26% done from the standpoint of mileage. Improvement or reconstruction work must be done on 18,181 miles (52%). New roads aggregating 7,901 miles (or 22% of the entire Forest road mileage) must be built.

WASHINGTON NOTES

Boost for New York Exhibit: The Weekly Underwriter, the journal published in the interest of insurance companies, said that "One of the best exhibits at the Fire Prevention Congress in New York was that conducted for the United States Forest Service."

Wheeler Talks to Washington Office: One of the most enjoyable family meetings held by the Washington office occurred last Saturday when H. N. Wheeler of Denver, Colorado, gave an illustrated lantern talk to the Washington members of the Forest Service.

Let's Have a Forest of Our Own: Frequently professional foresters are asked pertinent questions. The following has a more or less familiar ring: "If you are so sure that forestry is a paying proposition, why don't you practice it on some of your own land?" The reasons are many why foresters at large have not done this in the past, chief among which is the very pertinent matter of land and money. With few exceptions foresters are penny shy. However, there are some 50 odd foresters in the neighborhood of Washington, and many others who are deeply interested in forestry, who might be able to squeeze from the family budget a small amount of money which, if pooled together, would amount to a goodly sum. It is conceivable that this sum might be sufficient to purchase a considerable area of forest land in the neighborhood not too distant from Washington, which might be managed and cropped by up-to-date intensive forestry methods, producing a small profit to those who invested.

The benefits of such a proposition are many. The most important it would seem would be the psychological effect upon those who invested - yes, there are doubters in our midst - and to the timber-growing interests of the country as well. The publicity would not be insignificant if rightly handled, and the effect of such publicity might be far-reaching. It would show to the world in general that here is a group of professional foresters or those interested in forestry who have sufficient faith in their profession to back it up with their own money. (The amount of money involved would not necessarily be a part of the publicity.) Such publicity would go a long way towards developing faith in the members of the profession. Furthermore, such a forest would necessarily be a demonstration forest in many ways, and it should prove within a relatively small limit of time the feasibility of small forest holdings.

This is only an idea. It has its drawbacks obviously and it may have many, but let us argue the point. Why not buy 1,000 acres of loblolly pine land within a stone's throw of Washington and watch it produce some returns, if it does? Anyway, it would provide a good place for a vacation. We might go so far as to lay out some golf links.--C.W.B.

FOREST PRODUCTS LABORATORY

Laboratory Makes More Contributions to the Standardization Movement: Standardization is of especial interest to lumbermen everywhere, and not a meeting takes place without some spirited discussion of this subject. The Laboratory also has been studying this question, and has assembled its data and conclusions in two publications, Department of Agriculture Circular No. 295, "Standard Grading Rules and Working Stresses for Structural Timbers," and No. 296, "Standard Grading Specifications for Yard Lumber." The first of these is submitted solely as a method of grading structural timbers on a scientific basis. The second contains recommendations concerning standard sizes for yard lumber, uniform grading rules to be applied to all lumber manufactured into yard stock, and standard nomenclature for softwood lumber species.

Requests for these publications from lumbermen and manufacturers are being received at the Laboratory at the rate of 75 to 100 a day; at that rate, that part of the issue of 10,000 copies being held for this form of distribution will soon be exhausted.

FOREST EXPERIMENT STATIONS

Fire Studies: A canvass of State Foresters, forest schools, and associations of foresters and lumbermen to see what they have been doing in the way of fire studies has just been completed for the annual meeting of State Foresters. Twenty of the State Foresters and ten forest schools are not carrying on any fire studies, and none of the forestry or lumbermen's organizations is. Three forest schools and two State Foresters are proposing new fire projects, while two State Foresters and two forest schools are cooperating with the Service and other agencies in fire projects. Seven State Foresters have fire studies under way, chiefly concerned with phases of the slash disposal problem. Four forest schools report a fire study in progress; these studies are of only local importance except in one State.

Nearly every reply received voiced the need of more information, more publicity and education of the forest users. The greatest need appears to be for data to be used in appraising fire damage on individual tracts and a general blanket figure that can be applied locally by the unskilled fire warden for damage in different types and aged forests, and for different degrees of severity of burn.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

The San Isabel has received some good publicity on its recreational advantages in the shape of two attractive folders put out by an auto-camp-equipment firm in Pueblo, and a fine article in the magazine published by the Missouri Pacific Railroad.

Governor Confers with Colorado Sportsmen: The Governor of Colorado had over 100 sportsmen at a dinner on November 3 for the purpose of working out a definite constructive program for the good of the State game and fish interests during the coming season. The District office was represented by Col. Peck and Mr. Hatton who, through the aid of the field men, have brought together a lot of information on the fishing situation in Colorado, emphasizing particularly the retaining pond situation of the Forests of Colorado with suggestions, costs, etc., for working out a retaining pond program.

Lake States Experiment Station: Liaison was established during the past month with the newly organized Lake States Experiment Station at St. Paul. The Station staff was found to be comfortably established at the University of Minnesota and already tackling the problems of this important region in earnest. The District is happy to have Zon and his assistant within our geographical limits.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Forest Service to Help State Handle Timber Sales: The Secretary of Agriculture has approved a cooperative agreement with the State Land Commissioner of the State of New Mexico under which, at the request of the latter, the Forest Service will examine, appraise, and report on bodies of State timber proposed for sale and administer the sale after it is consummated under methods of approved forestry practice. This agreement is similar to that which has worked out so well over a 10-year period in Arizona under which more than 100,000,000 feet of State timber has been cut under Forest Service supervision on the Tusayan and Coconino Forests. The only essential difference is that the New Mexico agreement goes a little further in providing that the State pay salaries and expenses of Forest officers engaged on preliminary examination and appraisal work. A few sales have already been handled in advance of a formal agreement on the Lincoln and Manzano Forests. These two Forests and the Carson seem to be the Forests which will be affected most by this agreement.

All Interests Cooperate to Patrol Datil and Gila: Under the leadership of Col. G. S. Turner, president of the Silver City Game Protective Association, and Supervisor Fred Winn, a plan has been worked out whereby the Silver City, Deming, Mogollon, Magdalena and Reserve G.P.A's, the State Game Department, and the Forest Service will pool all their men and money into a single coordinated organization for enforcing the game laws on the Datil and Gila Forests during the coming hunting season. The G.P.A's are financing several paid deputies which, combined with the depoties furnished by the State and the services of Forest officers, will for the first time provide a comprehensive organization for patrolling this region. A man will be stationed at each entrance point to register hunters and examine their licenses as they go in. Sufficient men will be assigned to the 19 game refuges to furnish each one with a real patrol.

Men will also patrol all the camps to inspect them and when hunting parties come out, they will again be compelled to register, show their bag and report the game killed and seen. Our latest advices are that this ambitious and effective scheme will actually be in operation. It will set a new standard of efficiency in the management of hunting grounds for the Southwest.

Good Work Honored: Sportsmen of Albuquerque have presented Assistant District Forester Leopold with a fine .38 caliber army special Colt revolver. The note that accompanied the gun expresses the sentiment which prompted the gift by saying, "Presented to Aldo Leopold in grateful appreciation of his persistent and constructive efforts in organizing the various game protective associations, and in establishing throughout the Southwest sound principles of game conservation and propagation.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Stockmen Hear the News: The first of the District 4 range appraisal meetings was held October 29-31 at Salt Lake City. It was attended on the last day by all the Utah Supervisors and a fair representation of stockmen. The stockmen were not overjoyed with the range appraisal report, which seems to indicate an increase of fees ranging from 150 to 200 per cent. It was suggested by some that if the Forest Service had not undertaken the appraisal but had let the matter be fought out on the floor of Congress the stockmen would have "got by" without either the increase threatened by the present appraisal or any flat increase by Congress. That is all past, however, and is mostly a matter of opinion, so it had little bearing on the present case. In the second place, the stockmen were generally opposed to the placing of a commercial value upon the Forest Service range for one reason or another. They did not question the methods used by the Forest Service in determining the commercial value of the grazing preference, but expressed a desire to have a committee of one sheepman and one cattleman go over the appraisal in detail and make a study of private land values and other essential points used in determining the fees in order that they might submit their comments to the District Forester. The stockmen, of course, were in no position to offer much specific criticism of the points used in determining the value of the range, as it was all new to them. The meeting was not intended for this, however, but was merely to formally bring the range appraisal report to the attention of the stockmen for their study and later comment.

Deer Hunters See Dead Coyotes: Deer hunters returning from the vicinity of Wagon Road Ridge report seeing quite a large number of dead coyotes as a result of the recent poisoning operations on the area by the officers of the Biological Survey. They report having seen three or four dead coyotes in one spot. Apparently the cooperative work of the woolgrowers and the Biological Survey is bearing fruit.--Manti.

DISTRICT 5 - CALIFORNIA DISTRICT

The Garden of Eden: When you visit a Ranger Station where, because of the foresight of some Forest officer or perhaps the lack of this quality on the part of some rancher whose orchard he may have acquired, a lot of trees are found loaded with luscious fruit, doesn't it make you wonder if we could not perhaps do a little more to beautify and make productive some of our other stations? Can't we take advantage of this situation, now that the ban is lifted on the purchase of fruit trees from official funds, even in these days when shortage of money seems to be the chronic condition? With limited funds we can go a long way in making the homes of our Rangers real homes, more livable, by a little judicious landscape gardening and orchard planting.

Should We Standardize Bed Rolls? Speaking of standards, the question has been raised as to whether we should not adopt a maximum allowable weight for Forest officers' field beds. In connection with this subject, two members of the Washington office who recently visited the District are striking contrasts. Both were formerly members of the District. One had a bed that was only about eight inches in diameter when tightly rolled and weighed but a few pounds, while the other had a huge roll that weighed a flat 80 pounds. It was not ascertained whether the bed last above mentioned contained all of the pencils that the owner had removed from excess stocks seen during the season or whether this was a shipment of household goods in connection with the recent marital adventure on which the owner had embarked.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Time Well Spent: Deputy Supervisor Thompson of the Washington Forest "wised up" eight boy scouts on his last trip up Ruby Creek to Slate Creek Pass. "We sure had a fine trip," he writes, "and I feel that the time was well spent. It is surprising the knowledge these little fellows have along the lines of forest protection."

Burial Costs $9.50: Recently a camp fire was found burning and unattended near Odell Lake by the Supervisor of the Deschutes. The man who was responsible was located and assessed $9.50. Later Ranger Floe went by the camp and found the campers had departed for parts unknown, but they had done a first-class job of burying their fire - in fact, it looked very much like a new grave. At the head was a stone with the following inscription:

"In Memory of H. L. Plumb
$9.50 - Mid-week Special
Lovingly yours,"

Yes, We Have No Hydrants: She was from Washington, D. C., the home port of Public Relations, and she was seeing America first. She stopped at the Central Dispatcher's station on the Oregon National Forest and showed a lively interest in everything in sight. After taking pictures of Mount Hood and the dispatcher with a cute little camera, she listened patiently to the dispatcher's explanation of his instruments, especially the hygrothermograph and the map for platting the location of fires, her erstwhile smooth brow wrinkled with a wave of thought, and she asked: "But how do you fight forest fires? I didn't see any hydrants on the way up here."--A.G.J.

Telling the World: All water tanks for the trucks used in fire patrol along the highway in the Olympic blowdown area have been painted a bright red with the Service shield on either side and with this wording below: "For Forest Fire." Since these tanks are located along the Olympic Highway the educational effect of having these tanks carry explanatory wording was considered well worth while.

Hoh Bridge: The Forest Service has the first bridge across the Hoh River within the Olympic Forest. It is on the trail partly completed to the Blue Glacier. It is just above Glacier Creek where the canyon was only sixty feet wide and about 110 feet above the water.

ONTARIO BELIEVES IN FIRE-FIGHTING EQUIPMENT

The Forest Service of Ontario employs 630 canoes, 130 velocipedes, 32 motor boats, 26 railway motor cars, 14 auto trucks, 89 fire-fighting pumps, and 1,200 men. The monthly pay roll during the fire season is $120,000.--Pa. Forestry News Letter.

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RELATION OF WEATHER FORECASTS TO THE PREDICTION OF DANGEROUS FOREST FIRE CONDITIONS

By R. H. Weidman, Priest River Exp. Sta.

The chief purpose of predicting forest fire conditions is to give the fire protection organization several days forewarning, so that it may be prepared to find and suppress fires when they are small. The material in the forest which burns is of first consideration. Taking wood as a fuel, itis clear that if wood is dry it burns readily; if it is wet, it does not. The important factor, therefore, is the moisture content of the materials which comprise the fuel of forest fires. Thus, if we know the different degrees of inflammability of the fuel, in terms of differences in its moisture content, it is possible to state definitely for tomorrow or the next day what influence the approaching weather will have in making it drier or wetter; in other words, more inflammable or less inflammable.

The moisture contained in duff and other debris on the forest floor is influenced by various weather elements. The materials absorb moisture chiefly from the atmosphere in the form of rain and humidity. Relative humidity is the most important factor in this connection. It is not to be depended upon, however, as a direct index of inflammability, for the reason that changes in moisture content of woody materials lag behind changes in relative humidity of the air. A given relative humidity reading does not always mean a given moisture content of duff. Moisture content is the most reliable index of inflammability, because it reflects all the weather changes, including wind and temperature, as well as relative humidity. As the top layer of duff is the material which carries fire through the forest, it is the one which is chiefly concerned in predicting fire conditions in the virgin forest. A recently developed instrument, called a duff hygrometer, is being used at the Priest River Experiment Station to measure the moisture of the duff in place.

Knowledge of the existing condition of inflammability of the fuel is one requirement for making a prediction of fire conditions in the forest. The other equally important requirement is a thorough weather forecast, in order to know whether the forthcoming weather will bring conditions making for greater or less moisture in the atmosphere and thus greater or less moisture in the fuel. Weather forecasts in themselves are not sufficient as fire warnings; nor are the records of measurable conditions on the ground alone sufficient. The forest fire expert can determine the prevailing conditions of inflammability, but he is dependent on the trained meteorologists ofthe Weather Bureau for accurate and complete forecasts of what the weather is to be.

TRESPASS

By Ex-Supervisor

Not all the faults in our serious trespass problem can be laid to the red-tape of trespass procedure, bas as that is. A great many forest officers, t must be admitted, prefer to steer clear of these unpleasant tangles. They make enemies, wrack the nerves, and interfere with pleasant constructive work.

Overcoming this inertia requires pressure from above. Witness the California fire trespass work. Once the District really went at the thing in earnest, plus showing how, successful fire trespass cases went up by leaps and bounds. Of course they had the great advantage of taking the cases into State courts, but it was the pressure that got the cases.

Game cases respond to the same sort of pressure. And there is no question that grazing and timber trespass will likewise respond.

My own experience with trespass is that it pays to steer clear of the Federal courts. We stay out of the Federal courts in game law and fire cases. So far as I know, however, we can't go into the State courts on civil damage cases. But if we have reasonably good evidence, it is surprising what can be done merely by administrative settlement out of court. My own belief is that the great bulk of trespass cases can be handled - and with plenty of sting, too - by this method. It requires a Supervisor and Rangers who want to stop trespass, and it requires the backing of the District office and a strong determination to act neither the pink blood nor the bully.

RANGER BILL'S PSYCHOLOGY TEST

Q- What is a National Forest?
A- A piece of Uncle Sam's woodlot, formerly called a "Reserve" but now known as "The People's Playground."

Q- What are the three cardinal principles of a Ranger's job?
A- Faith in the Service. Hope in Reclassification. Charity toward your Superior Officers.

Q- If you were fighting a forest fire and it started to rain, what would you do?
A- Let it rain.

Q- What is the difference between a major and a minor road project?
A- Merely a matter of common cents.

Q- Should a Ranger ever try to bluff his Supervisor?
A- No, not without he has an ace in the hole.

Q- How many pencils should a Ranger use in a year?
A- That depends on how many children he has of school age.

Q- How can a Forest Officer on detail save enough out of his travel allowance to have his uniform cleaned and pressed?
A- By getting some of his friends to ask him out to dinner.

Q- How many pages should an official report contain?
A- One for Lands; two for Operation; ten for Forest Management, and twenty for Grazing.

Q- Define "Efficiency."
A- Hard work with a sugar coating to make it easy to swallow.

Q- What is an Administrative Site?
A- A tract of land that nobody else wants.

Q- What is a Forest Assistant?
A- A young man of much learning with few practical ideas.

Q- How do you mark timber under the Selection System?
A- By outguessing the Supervisor and Inspector.

Q- What is a work plan?
A- A child of fancy and of hopes deferred.--D-5.

INCREASING INTEREST IN FORESTRY SHOWN

The Long Bell Company, owner of 75,000 acres of land in the southern pine region, is making a survey of its holdings to determine to what extent some of its mills may be maintained on a continuous forest production basis. A comprehensive survey is planned to determine what is now on the land, what part of its holdings is agricultural, and what plans are necessary to insure and protect a new crop.

Merrill and Ring, owners of large tracts of timberland on the Olympic Peninsula in Washington, are likewise interested in forestry to the extent of retaining a firm of consulting foresters to advise them whether their holdings of Douglas fir will permit operations on a continuous production basis, and what must be done at the present time to make certain that their lands will be reforested after being logged.

Henry Ford, known "personally" to most of the field force, has acquired another block of forest land in northern Michigan amounting to 40,000 acres, and has announced his intention in connection with this enterprise, as well as in other lumbering undertakings, to handle this operation on a continuous forestry basis.

Julius Seidel, President of the Seidel Lumber Company of St. Louis, in a telegram to the Hoo Hoo convention in New Orleans, said: "Have just returned from an extended tour of Wisconsin and Michigan and having visualized the effect of the past and continued extermination of the virgin forests of these States I believe and submit that our greatest work to civilization is the dedicating of our services as Hoo Hoo, individually and collectively, to the awakening of the public conscience to the impressing needs of initiating or supporting an intensive perpetual forest policy both State and National."

The Louisiana Conservation Department in its publication also mentions several interesting experiments in timber growing being conducted on privately-owned forest lands.

RESEARCH EDITOR HEARD FROM

Just how to entitle a contribution from the new Research editor was a matter of some doubt. "Scraps from the Editorial Wastebasket" was suggested, "but" wastebasket;" as between editor and authors, has a sinister sound and the suggestion was therefore dropped. Any at the experiment stations who have received manuscripts back adorned with some of the editor's early efforts may be able to supply a title, such as "Sparks from a Heart of Flint" or "Wails from the Charnel House." If sufficient interest is evinced, a competition can possibly be arranged.

In a paper entitled "The Scientist, the Editor and the Public," by Assistant Forester H. A. Smith, read some years ago before an august body of scientists in Washington, the author attempted to epitomize the function of the editor. "His task," he said, "may be described as less sartorial than obstetrical. He assists at the birth." Now while no one in Research would express the thought quite so crudely as perhaps its enforced contact with the outer world influences PR so to do, it is evident that this statement sums up very well the activities of the ideal editor. He does not create. He is not there to tear a manuscript limb from limb and construct a Frankenstein bulletin or a Robot circular in its stead. His purpose is to see to it that each product of the labors of the man in the field is introduced to the world in such form that its inherent value and significance will be clearly recognized and duly respected by its public. He does not add anything of his own to the manuscript, but expends his efforts towards working with the author to bring out the best that the author has to give. Those concerned are urged to consider that the Research editor has some such idea in mind, however far from it some of his blue-pencillings may seem to stray. You know the Klondike dancehall motto: "Don't shoot the orchestra! He's doing the best he can."

Recently this appeared on a logging study table: "Number of times as much as it costs to log 22 as 2 log timber." That will be much clearer to some in the Service than it was to the editor at first glance. After some thought the editor attempted to put it more explicitly, as thus: "Proportion of cost to log twenty-two log to logging two log timber, too." It is felt that there is still room for improvement.

Tannhauser's staff, which flowered so unexpectedly, has recently been duplicated in the Forest Service by such remarkable growths as "coniferous mine props" and "coniferous sawtimber." While this may be quite sober shop talk, the light-minded public unfortunately persist in regarding such expressions as "howlers," similar to calling a leather jerkin an "herbivorous waistcoat." They regard facetiously also such expressions as this at hand: "The balance (that is to say, 'the remainder' or 'the rest') were secured from a reliable manufacturer who calibrated the instruments before being sent out." Fortunate indeed that his ejection was delayed to this extent!

Then, of course, there are such things as editorial slips and "howlers". rara avis - but that, as Rudyard has always maintained, is another story....

WASHINGTON NOTES

Forestry Referendum Gets Favorable Vote from Washington Board of Trade: Without debate and without opposing votes, the Washington Board of Trade on November 12 voted to return an affirmative answer to the United States Chamber of Commerce on each of the eight proposals in Referendum No. 42. This is the Referendum on the subject of a national forestry policy resulting from the work of a special committee.

Service Holds Lead in Published Articles: Are foresters naturally loquacious? or do the "great silent spaces" our camp ground folders so eloquently tell about impel our "silent spacers" to pour themselves out in print? At any rate, the Service still holds its lead in published articles, having contributed 18 out of 28 listed in THE OFFICIAL RECORD of November 7.

Prompt Action in Time of Need: Within twenty-six hours after the death of one of its Forest Service members in Washington the Government Employees Mutual Relief Association recently paid to the beneficiary the maximum sum permissible under the Association's schedule of allowances. This is only one of several recent instances where timely aid has been rendered members or their beneficiaries by this association, which is a cooperative, noncommercial organization of Government employees with an exceptionally large Forest Service membership.

Forest Conservation Shown in "Nature Festival": A most interesting result of the cooperative work done by PR with the nature study teachers of the District of Columbia public schools was the "Nature Festival" produced in the auditorium of the Central High School on the night of November 16. The pageant was written by Mrs. E. K. Peeples, Director of Nature Study, and was cleverly acted by boys and girls of the fifth, sixth, seventh, and eighth grades. It was in three parts - "The Friendly Stars," "Harvest Home," and "America's Treasures." The third part dealt entirely with forest conservation, and brought out clearly the importance of forests and the waste produced by man's carelessness. A forest fire was represented by a number of girls in scarlet and orange costumes. Their dance, with a crimson light thrown on the waving draperies of their costumes, produced a remarkable effect of flames. An audience of more than two thousand people applauded the performance heartily, and seemed both highly entertained and really impressed with the lesson conveyed by the pageant.--L.T.C.

FOREST PRODUCTS LABORATORY

This Douglas Fir Lasted a Long While: The fact that wood does not decay if kept continually submerged is illustrated by a specimen of wood collected by Supervisor C. C. Hall of the Santiam National Forest and sent to the Laboratory by District 6. This perfectly sound piece of wood, identified as Douglas fir, was obtained from one of the submerged trees in Clear Lake, which are estimated by Supervisor Hall to have been covered by water five hundred years ago.

References to wood that has been buried for ages are not uncommon. In the book by H. F. Weiss, "The Preservation of Structural Timber," he refers to the discovery of some sections of a wooden bridge across the Rhine constructed by Charlemagne some 1100 years ago; piles of the foundation of another bridge were found that were put in place by Simon de Montfort in 1264.

Helping Out the Golfers: In the manufacture of hickory dowels for golf shafts, it is present trade practice to air season this material for approximately two years. This time has now been cut to a week or ten days of kiln drying by using a special metal framework to hold the dowels straight during the drying process. This method of seasoning material for golf shafts will be put into effect by a big firm in Kentucky.

Forestry Students Visit the Laboratory: A class of forestry students from Ames, Iowa, accompanied by Professor Coville, recently spent two days at the Laboratory. Writing of a similar trip two years ago, Professor MacDonald says, "We found this trip to be very valuable in supplementing the work which we take up here at college. A trip of this kind does give the men a good insight into the scope and something as to the character of the work."

FOREST EXPERIMENT STATIONS

Cooperation: The various forest experiment stations now have cooperative projects under way covering work by the Bureau of Entomology, Bureau of Plant Industry, Bureau of Soils, Weather Bureau, and the Biological Survey.

We Suspected It! BARRELS AND BOX, a trade journal, states: "There have been many notable literary contributions on economic subjects relating to specific industries, but it is doubtful if any production in realm of fact or FICTION compares with Forest Resources of the World."

Zon and Sparhawk are now in the same class with Harold Bell Wright and Irvin S. Cobb.

What's In a Name? Sometimes we don't know ourselves. We had a nice handle for a vest pocket device to tell us when to go out and saddle up Liz and get ready for a fire. Mr. Dunlap in the Service Bulletin called this aforesaid device a "Forest Fire Hazard Indicator." Now, the Priest River Forest Experiment Station says that it doesn't mean anything and they want it called a "Duff Hygrometer." Knowing that the field abbreviates appropriations, files, names, and the like, we might suggest the D. Hygrometer.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Extension Conference at Fort Collins: Assistant District Forester Hatton, at the request of the Forester, represented the Forest Service at the recent Extension Conference at Fort Collins and reports it to have been one of the most interesting and helpful conferences that he has ever attended. Definite objectives were set up, using the period between now and 1930, which ought to make for great progress in extension work through the various States during this period. One universal comment by the extension directors was the depleted condition of the public lands outside the Forests and the necessity for some form of State or Federal control before anything can be accomplished in their improvement or betterment. The preparation of a handbook for the use of county agents was another of the prominent items taken up by the conference.

Antelope Census of Colorado: Out of 63 counties in Colorado, 21 show remnants of antelope, the total of the State aggregating approximately 950 head. This information has been tabulated and shown graphically on maps with a view, through the Colorado Game and Fish Protective Association, of instigating a campaign of educational publicity which it is hoped will arouse among local settlers an interest in these animals and thus make for their better protection. This showing of the presence of these animals in various parts of the State ought to make for encouragement rather than discouragement. We do not agree with some that they are doomed to complete extinction;; at least we feel that an awakened public sentiment has large possibilities in making for their better protection and increase.

Supervisor Agee in Denver on Detail: Supervisor Agee of the Cochetopa Forest is in Denver for two weeks to assist in some special work in the office of Public Relations.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Forest Service at Inter-Tribal Indian Ceremonial: A Forest Service exhibit was shown under the direction of Supervisor Kartchner at the Inter-Tribal-Indian Ceremonial at Gallup, New Mexico, September 13, 14 and 15. It consisted of a miniature forest with lookout tower and cabin, a series of pictures-showing fire and its effects, wood samples, forest scenes and a panel showing the work of the Forest Products Laboratory. The exhibit was attractively installed in two 14 x 16 tents. It attracted a good deal of attention and much favorable comment was overheard. The activities of the Forest Service were efficiently explained to several thousand persons by Supervisor Kartchner and Ranger Brennan of the Manzano. The exhibit was probably the only Forest Service exhibit which has ever reached a large number of Indians. There were about 500 in Gallup for the celebration, and many of them showed intense interest in the exhibit. Is it not possible that here a new fire risk has been effectively reached?

Arizona G. P. A.: Twenty-one delegates representing eight local game protective organizations recently met at Flagstaff and perfected the organization of the Arizona Game Protective Association. Several Forest Officers were present including Supervisors Calkins and Wales, Deputy Supervisor Voigt, Mr. Leopold of this office, and the officers of the Coconino staff. Mr. Musgrave and Mr. Gilchrist of the Biological Survey were also present.

Those returning from the meeting came back with the feeling that a real start had been made toward permanent progress. T. E. McCullough of Flagstaff, a former Forest Service man, was elected president. He has already demonstrated his ability to stay with the work in spite of discouragements, and it is hoped that all Forest Officers in Arizona will give him and the new association their full support.

Forest officers are encouraged to assist in the organization of local associations wherever needed throughout Arizona.

What Turkeys Feed On: Supervisor Sizer has submitted the following very interesting list of the crop contents of a wild turkey recently killed by Mrs. Sizer: 258 pinon nuts, 26 grasshoppers, 25 large black beetles, 6 small black beetles, 2 black wasps, 1/4 cup of grass seed.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

A Thrilling Life: If life was pretty dull for most of the surveying parties on the Idaho Forest this summer, the men working under Littlefield, who have returned from the backwoods, certainly got their money's worth, according to the Ogden Standard Examiner.

These men started out to run a traverse up the middle fork of the Salmon River, pushing their supplies and equipment on rafts. Their progress was finally stopped by a high cliff, against the base of which the whole force of the stream flowed. This was too much for them. On their return their food gave out and, according to the paper, they subsisted for two days on fish. This sounds like the real oldfashioned Lewis and Clark stuff. We are glad that at least one party of our men were able to break into print with some thrilling events for the summer. The field season has not been in vain.

Revised List of Sawmill Owners: All Supervisors have been sending in these revised lists. To show the ideal way of presenting such a revision, we are printing herewith the report sent in by one Supervisor. It seems to us very nearly perfect in clearness, force, and beauty of expression:

"It is necessary to expunge the name of Steve Gallich from the list of mill owners recently submitted. This genial wop has folded his wickiup in the dead of night, and from last reports is still one lap ahead of the sheriff and various outraged creditors."

The Ghost of the Dewey Mine: Blackie Wallace is a Ranger on the Thunder Mountain section of the Idaho Forest. He has his headquarters at the building of the old Dewey Mine; a log cabin built on a side hill, with a large cellar on the same level in the rear of the cabin, dug into the hillside. The whole place is thickly inhabited with pack rats, mice, and bats, so that the nights are indeed spooky under any circumstances. One night Ranger Wallace heard a greater commotion than usual and decided that probably two pack rats were having a fight to the death. This was too much for him and he determined to quell the disturbance. Going to the door of the cellar he flung it open and was confronted by the ghostly head of a mule only a few inches from his own. Action was quicker than thought, and Wallace finding no door handy, shot out of the window, closely followed by the ghostly mule. He later discovered that the mule was his own. While grazing on the hillside behind the cabin, the cellar roof had given way and the mule had fallen into the cellar on its face. The floor being covered with water and thin mud gave it a savage and ghostly expression which would be enough to scare anybody expecting to find a pack rat.

DISTRICT 5 - CALIFORNIA DISTRICT

Some Forest Ideals: When the rains come and the fire season ends, we old-time riders begin to think about winter supplies and firewood, and are apt to "let up a little" on everything else. The comforts of the cabin home, the daily companionship of the growing children, mean more to us than words can express. But after a few days, the forest man who is loyal to the greater ideals of the Service begins to ask himself: "Toward what are we climbing as the years pass?"

Then it comes over him in a flash of new inspiration, always new, always inspiring however much the word is bandied about, - SERVICE - of others, of State, nation and the world, a self-forgetful service that brings out the very best powers of body, mind and soul. Then he adds, "I must read more, study more, ask more questions of the biggest men - those who have specialized in different lines of the work. I must write more letters, talk with more people, live a broader, deeper life. Winter is the time for the best books, read by the evening fireside, - not only the ones on forestry but famous travels - Lane, Dr. Grenfell, Livingstone, Shackleton - and famous thoughts of the great thinkers - Socrates, Marcus Aurelius and a dozen more." So he starts in, and when the summer work takes him far afield he is a bigger and a better forest man.--C.H.S.

The Dog is on the Bedstead
The Cat is in the Lake
The Cow is in the Hammock
What difference does it make?

(Over the door of "Peace Cabin," the home of Charles H. Shinn).--D-5.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Use Douglas Fir Sawdust for Cattle Food: Arrangements have just been made by the Office of Products whereby the Duluth-Oregon Lumber Company of Portland will supply the Forest Products Laboratory, Madison, Wisconsin, with 50 sacks of Douglas fir sawdust. This shipment, after being converted into cattle food by the Laboratory, will be used in trial feedings at one of the large eastern experiment stations.

Experiments so far conducted by the Laboratory indicates that the sawdust of coniferous wood can be converted into a wholesome cattle food. An preliminary trial feeding, using a product prepared from eastern white pine, was conducted in cooperation with the Wisconsin College of Agriculture with favorable results. With the sawdust representing about 25 per cent of the ration, the cows maintained their production of milk and showed an appreciable increase in butter fat production. A decided increase in weight was noted during the period in which they were fed the treated sawdust.--W.H.G.

Road Tax: Some autoists think they are taxed too much for roads. Some roads get pretty well taxed by the autos. The ranger at Rock Creek, on the Wenatchee, reports 1,200 autos over the Chiwawa road in nine days during the huckleberry season. And the Chiwawa road is a one-truck, Minor road.--P.H.D.

Comments from The Seattle Laboratory: The report entitled "Tests of Telephone Poles" will soon appear in bulletin form. The report covers tests of fifteen groups of poles, running fifteen and twenty to the group, which includes strength data on western red cedar from Idaho, Washington, Oregon and Montana; northern white cedar from Minnesota; lodgepole pine from Colorado, Montana and California; western hemlock and Douglas fir from Washington, and Engelmann spruce from Colorado. Most of these tests were made at the Seattle Laboratory and are the result of an extended period of careful research. The data in the report will be unusually valuable at this time because of the rapidly diminishing supply of the species now used for telephone poles.--C.W.Z.

DISTRICT 7 - EASTERN DISTRICT

Telephone Pole Business on the Natural Bridge: Since January 1, 1923, $68,000 worth of timber has been sold on the Natural Bridge National Forest in Virginia. The greater part of this timber was chestnut, and about 90 per cent of the value is made up of chestnut telephone poles. One sale of 20,000 poles was recently made at an average stumpage of about $2 per pole, including poles from 25 feet to 65 feet, both inclusive, in length. The average prices obtained for chestnut have been as follows: If cut into poles, from $8 to $17.51 per M ft. b.m.; if cut into ties, from $5 to $10 per M ft. b.m.; if cut into sawtimber, from $1.50 to $4.50 per M ft. b.m.; if cut into extractwood, from $0.30 to $5 per M ft. b.m., with an average of $1 to $1.50 per M ft. b.m., for extractwood.

At Greenlee the output of poles has run as high as 500 and 600 a week. During the height of the hauling this past summer and fall, there were as many as 27 teams hauling poles every day out of this unit. Plans are perfected to put on the market all accessible chestnut poles on the Forest. A pole treating plant has been erected at Natural Bridge Station and has been in operation since about April of this year. The average number of poles treated per week since that time has been in the neighborhood of 250. This plant is probably the most up-to-date small treating plant which is owned and operated by the Western Electric Company and is the largest pole treating plant in the State. The decision for erecting the plant in this locality was reached after the Forest Service assured the officers of the Western Electric Company that 50,000 poles were available from National Forest land. This number can be secured and it is now estimated that this number will be exceeded if the chestnut blight does not kill the trees before they are cut. Operations on all sales are being speeded up to beat the blight and it is the intention of the pole operators to cut the poles two years in advance of hauling if this is found necessary to salvage the poles.

DISTRICT 8 - ALASKA DISTRICT

One-Man Logging Power in Alaska: Deputy Supervisor Geo. H. Peterson, with headquarters at Sitka, came in the other day with an interesting bit of information occurring on his district under his personal observation. Ed Strike, an old-time logger living at Tenakee, Alaska, accomplished some hand logging on Chichagof Island to be proud of. Alone, and using Dawson Jacks, he got out and rafted 63,390 ft. b. m. in 40 days. Among the logs was a spruce 181 feet in length, with a 6½ foot butt, a 12-inch top, and scaling 12,681 ft. b. m. Can you beat it?--H.S.

Service Bulletin

U. S. FOREST SERVICE

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THE FORT COLLINS RANGE CONFERENCE

By Will C. Barnes, Washington

At a gathering in Washington of western extension men and officials of the various State Agricultural Colleges, one of the leading matters considered was the question of pasturage. This included the whole range of management of livestock on small as well as on large areas, including National Forests and the open public domain. Secretary Wallace was rather impressed with the lack of information among many of the men present as to just what the Department had accomplished along these lines. Realizing there had been a large amount of material gathered and plans formulated for general management of livestock on open and private ranges, the Secretary felt the information had not been carried to the public as thoroughly as it should have been and appointed a departmental committee to take steps to correct this condition.

As a result of the work of this committee, which consisted of about every man in the whole Department interested in livestock management, a plan was outlined for the preparation of what was designated as a "range extension teaching program," to which each bureau was asked to contribute its share.

This consisted mainly in sending to the committee full information on range management, range livestock improvement, and intimately related subjects. The memoranda were to cover all available departmental publications on such matters, indicating specifically those paragraphs which should properly be incorporated in what was to be printed and distributed to the western extension men as a "range handbook," this book to be ready to place before the Western States Conference to be held at Fort Collins, Colorado, November 5 to 9, inclusive. A special committee of the large committee handled and correlated all this material. Some job, too.

Assistant District Forester Hatton and Grazing Assistant Lee of the Denver office attended this conference as representatives of the Service, taking full part in the meetings. Mr. Hatton addressed them on the Grazing studies work of the Service.

The Forest Service, Mr. Hatton states, received unstinted praise from the Conference for its various activities, particularly what has been done in range studies, and went on record as favoring the fullest possible use of these studies. The next conference will be held at Tucson, Arizona.

WHERE RANGERS GET OFF

By A. O. Waha, D-8

When an inspecting officer visits a Supervisor's office and asks questions of one kind or another about the business of the Forest, the Supervisor, if in doubt or if he really does not know, can turn to his statistical and other reports and be in position to answer such questions.

Where does the District Ranger get off under similar circumstances? Unless he has foreseen the need of having in his files an up-to-date statement showing the business as well as the resources of his district, he is subjected to some embarrassment when he finds he is unable to answer questions without first looking through his entire files. He would feel much better if in answer to the question, "How many cattle and horses have you under permit," he could immediately state the number and not be forced to say, "I think there are about 700 but I haven't totaled the permits as yet."

Regardless of the inspector with his questions, it seems to me that a District Ranger should have such a statement available for his own use. Why not put this down as a job for some stormy day in winter? Possibly the Ranger may need some help from the Supervisor's office in getting the latest figures on timber resources.

Statements of this kind to be of value must necessarily be kept up-to-date, but changes need not be made oftener than once a year.

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ROOTING FOR ROOTED CHRISTMAS TREES

By G. H. Collingwood, Washington

The recent article by J. Roeser, Jr., "In re Christmas Trees," carries a splendid idea, but one that can scarcely be claimed as having originated in Colorado Springs. The futility of attempting to prove whether one city or another was the first to use a growing Christmas tree is apparent, and anything like an investigation would undoubtedly show that the idea has sprung up spontaneously in various sections of the country.

During the past few years the city of Ithaca, New York, has annually decorated a thirty-foot spruce tree which grows in De Witt Clinton Park. The tree has served as a center for several large municipal gatherings, including a community "sing" on Christmas Eve. Last year the idea was taken up by two groups of residents in widely separated parts of the city. In one case a tall red cedar was decorated, and in the other an unusually fine specimen of Douglas fir was chosen. These trees were located on the hilltops, and at night the colored lights shone out across the valley for several miles around.

Home Christmas trees, as a part of the landscape plan, took a strong hold on the popular fancy in one of the newer residence sections of Rochester, New York. Reports have come from several sources that this particular neighborhood presents a most enlivening sight during the holiday season. Colored lights adorn the trees, and are often festooned along the hedges.

The nursery firm of Isaac Hicks, on Long Island, has long urged the use of tubbed conifers for Christmas trees. These can afterwards be transplanted to a place on the lawn.

Christmas trees which actually grow must always be in the minority, compared with the vast numbers of those which will be cut and hauled long distances to serve for a day or two and then be cast onto the ash heap.

Our apartment house life leaves little room for landscaping around "three rooms and a bath." But, thank heaven, there are still individual homes, and all cities have parks. Perhaps this is not forestry, but surely it is worth while for foresters to encourage Christmas trees that grow.

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TIME FOR A REVISION

By Jno. D. Guthrie, D-6

The SIX RULES for prevention of forest fires have unquestionably produced results from the public. The man who invented them had a good hunch. They were invented, however, before the days of motor travel and before the days of State laws and forest regulations requiring camp fire permits.

District 6 has been consistently trying to "sell the idea" they contain to the forest-using public on any and every occasion. Copy for all of our forest folder maps and other publicity material has carried them, but we can't seem to "sell" the revised ones to the Washington office.

Valuable as they have been in the past, isn't it about time to revamp them and make them a little more up to date? Besides, wouldn't the effect on the public be better if we put them in the form of a pledge? Rules make some people see red anyway, especially Government rules. Now with an apparent wakening of the public forestry conscience wouldn't it be politic to use a form suggestive of more participation on the part of the reader?

Let's look at the RULES a bit.

No. 1. "Matches. Be sure your match is out. Break it in two before you throw it away."

That's good, except it should be put: I will be sure, etc.; I will break it in two, etc.

No. 2. "Tobacco. Throw pipe ashes and cigar and cigarette stumps in the dust of the road and stamp or pinch out the fire before leaving them. Don't throw them into brush, leaves or needles."

Now, in the days of horseback or stage travel, there was lots of "dust of the road," and it was practicable to follow this part of Rule 2. But, we don't have as much dust as we did on our roads and most everybody travels by auto now and a cigarette snipe (nobody calls them stumps) thrown from a car isn't likely to fall in the dust of the road, but pretty certain to fall in the dry needles and leaves along the side of the road, the very place we don't want it to light. So let's change and shorten No. 2 to read:-

Tobacco. I will be sure my pipe ashes, cigar or cigarette stubs are dead before throwing them away. I will not throw them into brush, leaves, or needles.

No. 3. "Making Camp. Build a small camp fire. Build it in the open, not against a tree or log or near brush. Scrape away the trash from all around it."

Now, folks that go into the Forest to camp are not going to go out in the open (whatever that means) to build their fire; they want it in the forest. Besides, it isn't easy in D-6 to find an open spot. Wouldn't this be better?

Some Financial Statistics on Forest Roads and Trails:--Prior to June 30, 1923, there had been expended some $32,700,000 in the construction and maintenance of Forest roads and trails. Approximately three-fourths of this came from the specific Federal appropriations for this purpose. The mileage of roads constructed or improved totaled 6,874; of trails, 10,675. During the fiscal year 1923, 7,243 miles of road and 29,079 miles of trail were maintained.

It is estimated that during the fiscal year 1924, over fourteen million dollars will be expended. The estimated expenditures for the following year are materially less.--T.W.N.

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FOREST PRODUCTS LABORATORY

Inland Empire Douglas Fir Tests Made: Tests on the green material of the Douglas fir shipped from the Inland Empire have been made and will be followed later by similar tests on the air-dried timbers. A comparison of the Douglas fir from this region and that grown on the coast and in the Rocky Mountains will be possible when these tests are completed.

Best Ways to Air-Season Lumber: Whether lumber should be piled with wide or narrow spaces between the boards, how wide the stickers should be, or how high the roof above the piles should be, are some of the fourteen variables under experiment in the air-seasoning study in which the Laboratory is cooperating with the Districts and lumber companies. The species being studied are birch, Douglas fir, sugar pine, shortleaf pine, longleaf pine, western white pine, western yellow pine, and white fir.

Tree Fiber Makes Best War Bridge: A new type of pontoon bridge made from the fiber of the silk cotton tree, or kapok tree of Java, has been found so satisfactory in War Department tests that it is likely to replace the canvas boat type. The chief advantage of the kapok fiber is its buoyancy which makes it impossible to sink the rafts even if riddled with rifle bullets. It can also be put up more easily than the present type of bridge.

It is interesting in this connection to recall that all Army and Navy aviators when flying over water are required to wear kapok jackets under their flying togs.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

The Economic Value of Beaver as Water Storers has been vividly brought out recently by Supervisor Agee who made a special study of the water storage on certain creeks on the Cochetopa Forest. He found 43 beaver dams having a winter storage of 62 acre feet within a distance of six miles on Silver Creek. On the Forest as a whole the estimated water storage by beaver is 1,240 acre feet, capable of irrigating 30,000 acres of land for a period of 24 hours. The artificial storage on Silver Creek, one of the creeks on which close measurement was made, would have cost at least $10,000. The study has aroused great interest locally and requests have been made for use of the information in such publications as Popular Mechanics.

What It Leads To: Through our Bird Study course the twelve-year-old daughter of one of our Rangers became interested in birds. Because of her interest the Director of the State Museum of Natural History became interested in her. The girl is now a collector for the museum and is rapidly developing into a naturalist.

Christmas Trees: Improvement thinnings on the Pike National Forest are being made possible again this year by demand for Christmas trees. A special officer has been detailed to take charge of this activity on the ground and he reports that five men are now cutting for commercial enterprises on a large scale and with the business in sight it is likely that additional help will be necessary. A real improvement thinning is being made in sapling stands of Douglas fir, trees to be left being daubed with white paint. All other trees are cut by the purchasers and such trees used for Christmas trees as are suitable for that purpose. In order to overcome a recent agitation against the use of Christmas trees, which has grown out of the promiscuous and harmful cutting that has taken place on private land in this region, all trees will bear a shipping tag. On the back of this tag will be a statement to the effect that the tree was taken from a National Forest and cut under the direct supervision of the Forest Service for the purpose of improving the condition of the forest stand.

DISTRICT 3 - NORTHWESTERN DISTRICT

Concrete Demonstrations: D-3 Rangers are being urged to demonstrate forest activities in addition to talking them to public schools, stock associations, and other organizations. It is probably the easiest way to instruct and is welcomed by teachers. The Rangers that have tried it report good success. The Lincoln Bulletin tells about a recent accomplishment by Ranger King that illustrates this point specifically. On October 24 King accompanied a class from the Weed School to a cut-over area where brush burning was the main event. Supper was served on the ground and there in the midst of actual practice the Ranger gave an explanation of forestry practice on the National Forests. This is not King's first attempt in this direction and he is gradually bringing about a condition of cooperation and sympathy in a district where there has been an outstanding opposite condition. Each activity offers its opportunity in the degree that activities are related to the life of a community.

Stone Faces: It now appears that the most perfect example of "stone faces" carved by Nature among the mountain cliffs are not found in the far-famed Garden of the Gods, at Glacier National Park, or the Yosemite, but within the limits of our own Crook Forest. A photo just received shows in very unusual clearness and detail not one but two "Indian Heads" in the same rocky mass and with features so perfect that no imagination is required to see the very pronounced likeness to human profiles. Apparently we are still not advertising the scenery of the Southwest sufficiently. We are indebted to Mrs. H. L. Taylor, Alamo Ranger Station, for this very unusual photo.

Watershed Handbook: There is being prepared in this office for distribution to the field sometime this winter a new section to be added to the Lands Handbook covering the subject of watersheds and erosion. This section will cover what we know about erosion control and watershed administration in the Southwest. It will consist largely of diagrams and illustrations.

The Wealthy Forest Ranger Found: A voucher just passed shows that an Arizona ranger paid off in cash his telephone improvement crew. The amount was close to a hundred dollars. A financial deluge like this would break most New Mexico banks, not to mention forest officers.

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DISTRICT 4 - INTERMOUNTAIN DISTRICT

A Misunderstanding: We are informed that an item on 10% money, published in the Ogden Daily News of November 2, is causing considerable excitement in certain quarters. This item states that Nevada has been allotted one hundred thousand dollars of 10% money, and Utah about a quarter of a million dollars. "Has been allotted" does not mean allotted for the next fiscal year. It means that this amount is the total which has been allotted in all the years since King Pharaoh made the first allotment in Egypt and sent Moses and the Children of Israel out to make the preliminary surveys in the wilderness. This took them 40 years and has started a precedent in such matters.

Changes in Positions: The vacant supervisorship of the La Sal Forest is being filled by the transfer of Supervisor Orange Olsen from the Lemhi. He expects to make the move some time next month. Deputy Supervisor Oscar Mink of the Weiser Forest will fill the position at Mackay.

Indians Getting a Chunk of the La Sal: An executive order signed by President Coolidge October 12 provides for the elimination of 8,640 acres from the La Sal Forest. This area is chiefly in Allen Canyon, not far from Blanding, Utah. This area, and some additional land outside the Forest, it is understood, has been set aside as a reservation for a band of Piute Indians which have heretofore been a roving band and the cause of much trouble to the white settlers of that region. This is the Old Posey gang that was responsible for the "Indian war" in San Juan County last year.

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DISTRICT 5 - CALIFORNIA DISTRICT

What Are National Forests and National Parks? Letter by the District Forester to California Newspaper Editors.

Dear Mr. Editor:

Much confusion and misunderstanding exists in the public mind as to the essential differences between NATIONAL FORESTS and NATIONAL PARKS. It is hoped that the following facts will help the members of your office to understand clearly the common accepted standards for the establishment and administration of these public areas:

There are 17 National Forests in California with a net area of over 19,000,000 acres. The National Parks of the State are four in number and include an area of approximately 1,000,000 acres.

The National Forests are administered by the Forest Service of the United States Department of Agriculture; while the National Parks are under the jurisdiction of the National Park Service of the Department of the Interior.

The purpose of the NATIONAL FORESTS is to protect and maintain, in a permanent productive and useful condition, lands unsuited to agriculture, but capable of yielding timber or other general benefits, such as forage for livestock; water for irrigation, domestic use and power, and playgrounds for our citizens. All the resources of the National Forests are developed to the greatest possible extent consistent with permanent productivity under the principle of coordinated use. The principle of use of resources is the vital distinction between National Forests and National Parks.

The purpose in creating NATIONAL PARKS is to preserve the scenery, the natural and historic objects, and the plants and wild life. The objects are the enjoyment of the people and the aiding of education and scientific study by keeping such areas unimpaired. National Parks are protected completely from any and all utilitarian and commercial enterprises save those necessary for and subservient to legitimate park uses.

Many head-writers still confuse the National Forests with Parks; others call them "forest reserves," although Congress many years ago officially changed the name of these Federal areas to NATIONAL FORESTS. I am sure that everyone at all familiar with the use that is being made of National Forest resources for the benefit of our citizens and the upbuilding of California will appreciate the inappropriateness of the old term "reserve."

Thanking you for your interest and cooperation in the public-spirited movement to educate our citizens in forestry and fire prevention, I am,

Very truly yours,
PAUL G. REDINGTON,
District Forester.

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DISTRICT 6 - NORTH PACIFIC DISTRICT

New Sales: Advertisement has begun for 27 million feet of timber on Upper Wind River on the Columbia Forest at $1.50 per M for fir and cedar, $3.00 for white pine, and 50 cents for hemlock.

Bids have just been received on 21,522,000 feet of timber on the Siuslaw. The timber was advertised at $1.50 per M for fir and cedar and 50 cents for hemlock. The high bidder was the Umpqua Mills and Timber Company, who bid $2.00 per M for fir, $1.50 per M for cedar, and 50 cents per M for hemlock.--F.E.A.

Land Exchange: Land exchange with private parties approved by the Secretary of Agriculture since 1914 in District 6 shows a total of 54,410 acres offered to the Government in 17 different exchanges; 40,442 acres were granted in addition to timber cutting rights where the title to the Government land was not affected. Values involved were nearly $585,000.--C.J.B.

Getting Publications to Public: During the Pacific International Livestock Show in Portland some 5,600 pieces of Forest Service publicity material were distributed. The Mt. Hood folder and the D-6 windshield stickers led in popularity, 1,500 of the former and 1,000 of the latter being given out. The Columbia, Umatilla and Cascade folder maps were the most popular map folders. Eight hundred copies of Government Forest Work and 100 Forests and Forestry in United States were distributed.

Service Bulletin

U. S. FOREST SERVICE
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ALL THE ESSENTIAL INGREDIENTS

By W. I. Hutchinson, D-5

The annual Work Plan was finished. But no one around the ranger station dared to call it a work plan, for it was a symposium of objectives garnished with the most up-to-date methods of efficiency and standardization gathered from all the "best thought" of the ages and ground out to the field from the gloomy maw of a mimeographing machine. There were columns upon columns of jobs and sub-jobs and sub-sub-jobs, worked out to split seconds, covering every conceivable contingency from the homogeneous calories of luscious oats old Bess was to receive as her per diem, to the latest method of identifying blister rust while riding at the rate of 3 miles per hour. Nothing had been overlooked, except possibly practical ideas. And now the final conference was on before this momentous effort would be sent the District Office for review and approval.

"Have you got in all the Improvement work you expect to do next year?" inquired the Supervisor.

"Yes," replied the Ranger, "not only for next year but for five years. I plan to use the Guards on all the big jobs when the Inspectors aren't around."

"Fine! Have you cut headquarters work to the bone?"

"Yes, and if anyone ever finds a surplus of time around this Station in my diary again they'll have to take an advanced course in calculus."

"And have you put down plenty of grazing inspection trips?"

"Why you know I always do that, even if I never get beyond the first salt lick up the gulch."

"How about a winter study course in modern business methods and self analysis?"

"Did you ever hear of me leaving that out?"

"Well, you'd better not if you want to draw your pay check and stay on the efficiency register. I suppose you've allowed plenty of time for that brush burning job?"

"Oh, yes, there won't be any trouble about that because I've already threatened to close down the mill if they don't clean'er up. I'm going to do some public relations work, too, now that we've got a new schoolmarm in the district."

"That's a good idea. How do you plan to use your spare time?"

"Well, as near as I can figure, the jobs I've got listed for next year would take an able-bodied man just about 500 days to clean them up. But if the fishing don't get too good, and I don't have to "personally conduct" more'n five or six D.O. men a month around my district, and can save enough out of my wife's housekeeping money to buy a new inner tube for the jitney, I reckon I'll be able to hold down the fires and handle all these little jobs and still keep within the limits of a field man's work day of nine to four with an hour for lunch."

"All right," said the Supervisor, "I believe your Work Plan will be a success."

And it was, too.

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LET'S NOT BECOME FORGETTERS

By Jno. D. Guthrie, D-6

Mr. Sherman's suggestion in the Service Bulletin of November 5 was most timely, for we are much inclined to become a nation of "forgetters." Three names on the Forest Service Memorial Tablet are from D-6. These are Roy Muncaster and Stanley R. Augspurger, both victims of the Tuscania disaster, and Donald R. Frazier, who died in England. Muncaster Mountain on the Quinault District, Olympic Forest, lies within a ranger district of which Roy Muncaster was in charge when he volunteered for the 20th Engineers.

Donald R. Frazier from the Hood River Valley was a forest guard and lookout on the Oregon Forest in 1916 and 1917. The name Frazier Mountain was recommended to the Geographic Board by this District on May 28, 1923, for a peak near his home valley and within the district on which he worked.

Stanley R. Augspurger is as yet without a tangible tribute. He worked in timber survey crews on two Forests, the Wallowa and the Columbia, going later to the Wind River Experiment Station, from which place he entered the Army. Steps have been taken to give his name to some location or object, topographic or otherwise, in this District.

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A CONE DISEASE OF THE TURPENTINE PINES

By W. R. Mattoon, Washington

A pine-cone rust (Cronartium strobilinum), according to Dr. G.G. Hedgcock and G. G. Hahn of the Office of Forest Pathology, Bureau of Plant Industry, is known frequently to have a damaging effect upon the reproduction of the pines upon which it occurs - namely, longleaf and slash. Although the field survey of this disease is incomplete and its exact distribution is not known, these investigators state that in certain years it is known to have been prevalent over central Florida. In some localities where the rust is present the reproduction of the two pines in question is very scant.

The alternate host trees of this rust are known to be various oaks, particularly the live oak and others of that general type. The immature first-year cones become infected soon after they appear in very early spring (about February) and during the next two or three months usually swell abnormally to about the size of second-year mature cones.

By autumn the diseased cones, it is stated, are all dead and have mostly fallen to the ground. The leaves of the oaks become infected in May, and bear the rust till the following February, when the pine cones of the new crop become infected.

Over the natural ranges of longleaf and slash pines - the two commercial turpentine-producing pines - reproduction is considerably irregular and scattered. The factors commonly ascribed as the cause for this condition are repeated fires and, in the case of longleaf, razorback hogs. The persistent yearly burning by the "natives," who run small bunches of cattle usually on lands owned by others, would seem to be nearly sufficient cause for the small amount of young growth. Poor forest reproduction may, however, be due in part to a lack of seed as well as the death of seedlings.

An interesting problem is thus before the investigators of the Southern Forest Experiment Station and of other bureaus in the Department to ascertain to what extent each of the enemies - fire, razorback hogs, and the pine-cone rust - are responsible for the incomplete reproduction.

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WASHINGTON NOTES

Col. Greeley to Address American Game Association: The Forester has accepted an invitation to make the principal speech at the banquet of the Tenth National Game Conference in New York City on December 10. The conference is held under the auspices of the American Game Protective and Propagation Association. Col. Greeley's subject will be, "Game in the National Forests."

Forestry Referendum Completed by U. S. Chamber of Commerce: To assure a permanent future supply of timber, the Chamber of Commerce of the United States recently advocated the adoption of a broad national forestry policy. The Chamber's position is taken as the result of a referendum vote just completed among more than 1,300 business organizations making up the national organization's membership. A preliminary canvass of votes cast shows that seven out of eight specific proposals contained in the referendum carried by a wide margin. The recommendation which was not indorsed provided for the setting up of a National Forest advisory council.--Daily Digest.

M. W. Talbot, "Weed Specialist": On December 1 the Service lost one of its most capable grazing experts when M. W. Talbot, Grazing Examiner, took up the work of "Weed Expert" in the Bureau of Plant Industry at Washington. Talbot was "hand picked" by Dr. Coville, Botanist of the Bureau, who met him while on detail to the Washington office last year. He will be in charge of a new branch in that bureau, to be called the "Branch of Weed Investigations."

In this work Talbot will have a field all to himself. His range will be the whole United States, but naturally the major portion of it will be in the eastern part of the country and especially in connection with grazing on the farmers' pastures and woodlots.

Somebody once described a weed as a "plant for which nobody had yet found a use." As a weed expert Talbot may be able to discover uses and values for weeds hitherto listed as utterly useless.

With his headquarters here in Washington we shall have the benefit of his cooperation with the Service work for our relations with that Bureau have always been close and harmonious. Our loss is their gain.

We hate to see good men get away from us, but at the same time it's quite a compliment to the training we are giving our grazing men when their services are in such demand for higher and better paid positions.--W.C.B.

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FOREST PRODUCTS LABORATORY

Laboratory Studies of Ancient Method of Seasoning Wood in Full Swing: Air seasoning, although practiced for ages, had not been made the subject of carefully planned study until the Forest Service began its present research. Evidently there is room for improvement, as methods of seasoning differ even when carried on by companies whose practices are the result of long experience.

Fourteen variables are being studied and work is being done on eight species in cooperation with the Districts and 18 companies. Birch, Douglas fir, sugar pine, shortleaf pine, longleaf pine, western white pine, western yellow pine, and white fir, are the species studied and the variables are as follows: age and usage of stickers, close piling with well-defined vents, end versus cross piling, foundation heights, graduated spacings in successive vertical layers, grades of material, heights of roof above piles, spacing between stickers, spacing between boards, sticker widths, stickers in vents cut and uncut, thickness of stickers, uniform board widths, and vents versus no vents.

Laboratory Water-Resistant Glue Meets Severe Test: Although standing in three feet of water for several days, no damage at all was done to two hundred veneered doors built up with glue made according to a formula developed at the Laboratory, so a furniture firm reported.

It seems that several thousand doors of various types were stored in the basement of a warehouse which was flooded after a heavy rain, with the result that about 800 doors were lost through the warping and buckling of the panels.

The firm writes: "We feel sure that you would be interested in this incident, particularly so as it demonstrates thoroughly that your waterproof glue is a success."

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DISTRICT 1 - NORTHERN DISTRICT

Messrs. Morrell, Borg and Dickinson, Please Note: Pine squirrels ARE carnivorous!

Down on the Cabinet Forest three years ago I met a good lady who had worn out several .22 rifles shooting pine squirrels. I asked her why, and she declared they ate her young chickens. This lady was intelligent, of fine character, and therefore quite reliable.

Then in 1922 I was down on the Nezperce Forest and saw precisely what Mr. Borg saw at Seeley Lake. Two robins were circling around a small pine tree and making no small rumpus about something. I investigated and found Mr. Pine Squirrel coming down the tree with the last young robin swung over his back in the latest fox style. Thinking it might not be dead I tried to scare him away, but he was mighty hard to scare. When at last he let go and perched militantly on a stump a few feet away I saw that the robin was dead. Then reflecting that the squirrel, after all, was not so very much worse than the rest of us, considering his education and social advantages, I backed off and watched him devour his catch. He ate it!

In this one small matter you can bank on my reliability ABSOLUTELY. --A.O.M.

Advertising Pays: The Bitterroot had a small display at the Ravalli County Fair, a part of which was a collection of cold embers to make more realistic a camp fire. During the night some one threw out the cold embers and poured a bucket of water over the "fire."

The idea is getting over.

Supervisor Ernest W. Shaw, of the Absaroka, left us October 12 to attend to personal affairs in the East. Among his accomplishments for the good of the Service Mr. Shaw will long be remembered as the man who helped put "Elk Patrol" on the map. His work for the protection and relief of the winter-driven northern herd of the Yellowstone has borne results in better conditions for the noblest game animal of America, and many a lordly bull is swinging an antlered crest and chewing with a full set of teeth which, without Shaw's efforts, would now be gracing some Ford or Cadillac dashboard or dangling from an ornate watch anchor.

Shaw is a B.P.O.E., and he calls it "Better Protection of Elk." Long life to him!

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DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Extensive Development of Summer Homes on the Pike: Application has just been made by the Pike's Peak National Trails Association for a tract of approximately 40 acres in the Pike for headquarters for the association, which will include not only a club house but individual summer residences. Membership in the association is fixed at $5,000 which permits only the wealthy to join. The land has been tentatively divided for several years into eight summer home sites but only one permit has been issued and the permittee's improvements have now been purchased by the association. It is being replotted to provide for limited use of the entire area by members of the association after endorsement by the association proper.

Each summer home site will comprise approximately five acres and expensive houses will be erected. A start has been made by Mr. J. R. Bradley of New York and Palm Beach. His improvements when completed will cost in the neighborhood of $25,000. The improvements are not elaborate but substantial and commodious. The club house will be built on the same scale.

Trails are to be constructed radiating from the Club throughout the Forest entirely with funds of the association. An automobile road is to be constructed to it connecting with the State highway leading to Colorado Springs.

It is the purpose of the association to do something useful as well as merely occupy the site for pleasure, and it is expected that some very useful public improvements will be placed upon the Forest.

The Study Courses in D-2 have proved to be of great value as shown by the year's enrollment. Seventy-seven per cent of the personnel on the Forests have applied for at least one course. Five Forests came in 100 per cent, and on only two is the percentage less than 50, and applications are still being received.

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DISTRICT 3 - SOUTHWESTERN DISTRICT

Do Coyotes Go Wild? Recently when passing the old Bullock Ranch, which is deserted, I noticed a coyote who was snapping at his sides and acting queer. I tied up my pack horse and tried to rope him, as I had no gun, but he got into a rocky canyon where my horse could not follow. I camped at the Bellota Ranch that night, which is also deserted, and just as the moon rose in the morning, about three a. m., I heard a noise in my pack sacks near my bed. I sat up and saw a coyote's head above one of the sacks, where I had some bells and other noisy things. He seemed to be strangling and chewing on the handles of the sack. Picking up a handful of gravel, I threw it in his direction and shouted, but instead of stampeding in the direction I expected, he came for me and the more I bucked and elbowed him the more determined he became to ride my bed. I had covered my head before he arrived, so I finally lay still, and after choking and chewing my tarp awhile, he charged my pack horse, who was picketed near. A commotion ensued, in which I took part with an alamo limb, which broke the first time I landed on the coyote, and I was making tracks for the bed again when Mr. Coyote changed his mind and ambled to the old ranch house some 30 yards away, where he encountered a hog and they went off across the flat, whoofing and choking. Now I am watching the poor pack horse for signs of hydrophobia, as he had a badly lacerated eye which has turned white, and the first time he refuses his drink I will have to play executer.--Coronado.

Westveld Leaves: Mr. and Mrs. Marinus Westveld stopped over in Albuquerque on their way to Amherst, Mass., where Mr. Westveld will become one of the assistants at the New England Forest Experiment Station which has recently been established by the Forest Service. The character of Westveld's work is too well known to need comment. He has been in the District for 10 years during which time his work has taken him to practically every Forest. It goes without saying that his loss will be felt in the District. The timber sale work on the Coconino will henceforth be in charge of Mr. Fred Merkle who is being transferred from the Sitgreaves.

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DISTRICT 4 - INTERMOUNTAIN DISTRICT

Fillmore Reconnaissance: The intensive reconnaissance on the Fillmore this summer covered a little less than 120,000 acres at a cost of a little less than 3¢ an acre, the drainage map method being used. This method makes a very good looking map and at a considerably lower cost than the regular topographic map with the contours properly shown.

In 1921, when the regular topographic map was made, it cost 5.9¢ per acre. In 1922, a part of the work was done by the regular topographic method and part by the drainage method at a cost of 3.3¢ per acre. That summer a careful account was kept of the cost of the two methods using exactly the same crew and it was found that the cost of doing reconnaissance with a drainage map system was only 65 per cent of the cost when a regular topographic map was made. There is an equal standard of accuracy in both methods. The only difference is in the way that the topography is shown. About 200,000 acres of the Fillmore remain to be done next year.

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DISTRICT 5 - CALIFORNIA DISTRICT

Timber Sale on the Sierra: Award of the sale of 23,500,000 feet B. M. in the Stevenson Mountain unit on the Sierra has just been made to the Prescott Brick and Lumber Company of Fresno. About 78 per cent of this timber is yellow pine, 13 per cent sugar pine and the balance white fir and incense cedar. The quality of this timber is relatively poor and the stand averaged only about 14 M per acre. Logging will be difficult and this cost has been estimated at nearly $11 per thousand. These factors explain the relatively low stumpage rates of $2.40 for yellow pine, $4 for sugar pine and 50¢ for white fir and incense cedar.—C.I.D.

The Forest Products Laboratory Helps: It is a good bet that the field men could help the Forest Products Laboratory and the District Office of Products to be of much more service to the lumber and wood-working industries in California. Maybe the field men do not know where to hit. Take boxing and crating f'r instance. The Laboratory saved the United States a million dollars in freight on rifles going to France by redesigning the shipping box so as to save something over 25 per cent space, when cargo space was worth $6.00 per cubic foot. That, however, is old stuff which everybody knows who has read the pamphlet entitled, "Forest Products Laboratory," which was distributed to the Forests last year. A recent instance is that of a manufacturer of steel pulleys who was having trouble with his crates. When put into the big drum at Madison, this crate, loaded with four 36" pulleys and twelve 8" pulleys went to pieces with just one drop. The Laboratory designed for them a new crate which required 13.5% less lumber, 33-1/3% less metal strapping and weighed 5% less; and in the big drum it stood 100 drops. Anybody who has ever seen a heavy crate tumbled in that drum will tell the world that that crate ought to get to its destination whole. The same possibility of improved design applies to containers all the way from those for heavy machinery to those for apples and celery.—C.L.H.

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DISTRICT 6 - NORTH PACIFIC DISTRICT

Cooperative Mapping: A member of the United States Geological Survey recently visited the District Forester's office. He was greatly pleased that he had been able to make use of topographic maps prepared by the Forest Service for some 98,000 acres of land within the Cascade Forest in his survey of the Diamond Peak quadrangle. The fact that this topography checked out well within the allowable limits of error so that it could be used bodily made it possible to complete the field work for the quadrangle in one season, preventing the necessity of his having to return with a party to the area next summer.

Our map data that proved so useful to him (and incidentally that saved the Government a few thousand dollars) were gathered in the regular Forest map work on land classification, timber surveys, specific timber sales, and other Forest mapping.--A.H.H.

Assistant District Forester Kavanagh will spend some time this winter on a detail in the branch of Grazing in Washington, D. C. He was a speaker at recent meetings of the County Game Wardens at Ellensburg, Washington; at the Washington Sportsmen's at Yakima; and the Izaak Walton League in Portland.

Check Held Up: A salary check of Ranger E. T. Rogers went through the Siskiyou train robbery and explosion of October 11, having been mailed in Portland at 6 p. m., October 10. When Rogers received what was left of it (about half) his name and address were still legible, but being hardly negotiable, he returned it to Accounts for issuance of a new check.

He Learned His Lesson: Windshield stickers mailed by the Chelan to automobile owners last spring with a brief request for cooperation in that respect brought from one man a request for four more. The interesting point is that he had recently been convicted for letting a fire get away from him. Apparently this man has learned the lesson our law enforcement is intended to teach, and taken it in proper spirit, as most of them do.--P.T.H.

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Service Bulletin

U. S. FOREST SERVICE

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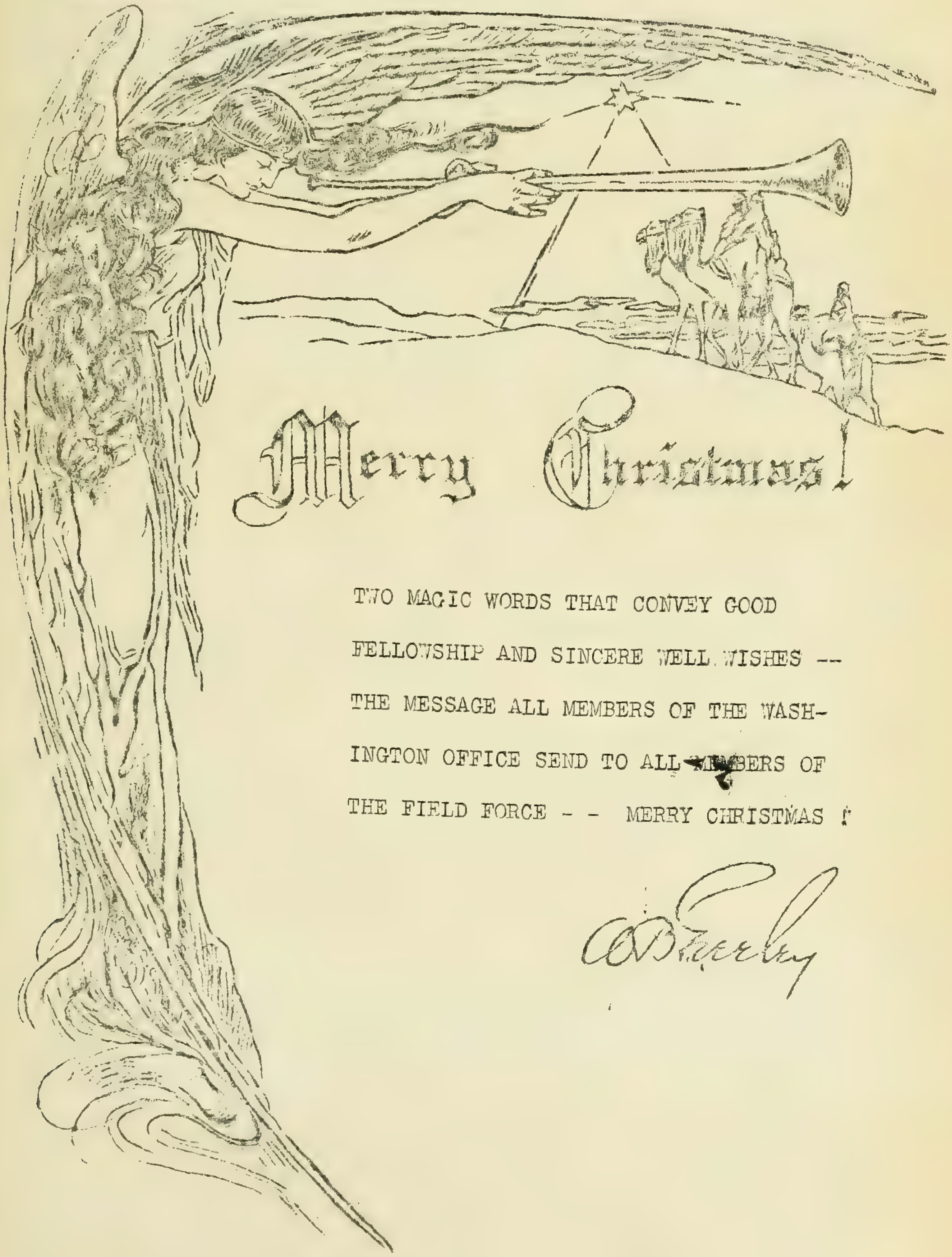
Merry Christmas!

TWO MAGIC WORDS THAT CONVEY GOOD FELLOWSHIP AND SINCERE WELL WISHES -- THE MESSAGE ALL MEMBERS OF THE WASHINGTON OFFICE SEND TO ALL MEMBERS OF THE FIELD FORCE - - MERRY CHRISTMAS !

WBGreeley

WASHINGTON NOTES

Santa Claus in Washington: No, Gentle Reader, Santa Claus in Washington does not necessarily mean Uncle Sam. This time it means that the Old Boy himself will appear at the First Congregational Church across the street from the Washington offices with a load of toys for the kids belonging to members of the Washington staff. About 100 children are expected to gather round the Christmas Tree - which unfortunately will not be a living tree - on the day before Christmas to receive the gifts which Assistant Forester Barnes pinch-hitting for Old Saint Nick will hand out. This Christmas party for the kids has been an annual affair for many years and seems to grow in popularity.

Prizes for Christmas Tree Photographs: The American Forestry Magazine offers cash prizes for photographs of growing Christmas trees, according to an announcement appearing in the December issue. Perhaps some Forest Service people can bring home the bacon. Here are the conditions:

1. The tree must be growing and in Christmas garb. There are many novel ways of having Christmas trees without killing them and later consigning them to the ash heap.

2. Write your name and address and a description of the picture plainly on the back of the photograph or a sheet of paper attached to it.

3. Mail the photograph before January 15 to the Christmas Tree Contest Editor, American Forestry Magazine, Lenox Bldg., Washington, D. C., enclosing return postage if you desire the photographs you submit returned.

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FOREST PRODUCTS LABORATORY

Forty Attend the Courses: The forty men in attendance at our courses are enrolled as follows: boxing and crating 15, gluing 10, kiln drying 6, wood properties and uses 9.

As has been the case with previous courses, these men come from all parts of the United States. Of interest and gratifying also is the fact that the following organizations have sent representatives to at least one of the preceding courses: Brunswick-Balke-Collender Co., Bureau of Explosives, Chicago Mill and Lumber Co., Huttig Manufacturing Co., Perkins Glue Co., Ritter Lumber Co., Union Lumber Co., Western Cooperage Co., The Wirebound Box Association.

The Laboratory as a Factor in the Forestry Policy: The urgent need for the reduction of wood waste as one of the factors in the national forestry policy and the work of the Laboratory in this forestry movement are expressed in the following editorial by the Lumber World Review: "Probably, however, one of the most profound influences for greater efficiency, more economical production and conservation of timber in this country at the present time, is the Forest Products Laboratory at Madison, Wisconsin, an engineering research organization whose engineers are busy in almost every department of the field of lumber utilization, including lumber grades, kiln drying, wood preservation, gluing, painting or other wood finishes, and the marketing of a larger proportion of the 50 per cent or thereabouts of lumber going into industrial consumption, in the form of factory dimension sizes, thus saving freight and a larger proportion of the log. This research work of the Laboratory is to-day more widely known and more generally appreciated in the lumber industry than ever before and its influence will continue to grow year by year."

We Grow and Protect the Timber, Then Waste It: Three-quarters of a billion board feet annually is lost in just one form of wood use which can be saved through preservative treatments!

This loss is in ties which are not treated; the estimate is low in comparison with that of the American Railway Engineering Association which placed it at one and a half billion board feet.

The annual consumption of ties is in the neighborhood of 100 to 120 million. The average life of treated ties is believed to be about 15 years and of untreated ties, 7½ years. Latest reports show that about half of the ties used are treated. The life of the other half could be doubled by treatment, thus reducing consumption proportionately. If 100 million ties were used each year and all were treated, the saving in annual consumption would be 25,000,000 ties, or on the basis of 30 board feet per tie, the annual saving would be 750,000,000 board feet.

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FOREST EXPERIMENT STATIONS

Turpentine Study: The Southern Forest Experiment Station has been carrying on a series of studies of the relation of various kinds of chipping to yields of resin. Mr. Wyman has found for conditions in Florida this last year that there is a relation between yields of slash pine and temperature. The gum yield per week at the beginning of the season was 1.86 ounces in April, rising rapidly to a peak of 9.07 ounces in early August. From this point, the yield dropped in September to 6.58 ounces and to 5.04 ounces at the end of the season in late October, when the flow practically ceased.--E.N.M.

A New D.B.H.--Those who are interested in taking diameters and are familiar with the term D.B.H. would have great difficulty in the turpentine areas of the South, for the chipped facing on the trees runs up to 7 or 8 feet. The Southern Forest Experiment Station has overcome this difficulty by measuring the trees at nine feet instead of the familiar 4.5 feet and they are looking for a forester tall enough to take these measurements so that they can do away with the ladders this height necessitates.--E.M.M.

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DISTRICT 1 - NORTHERN DISTRICT

Care of Increment Borers: An increment borer will not produce a clean, smooth core on which the rings can be readily counted unless the interior of the barrel is clean, polished, and free from rust. It should be given practically the same care as a rifle or shotgun barrel, and cleaned and oiled after every day's use. An oil can and a revolver cleaning rod should be standard equipment to accompany each borer. Try it once and notice the difference in the appearance of the cores.--E.K.

Snag Disposal: Readers of the Service Bulletin may recall that about one year ago Ranger Hodgins of the Lolo Forest wrote up very briefly his views and experience on the subject of reducing fire risk by setting fire to snags during the late fall and early winter, when they could be burned without danger to the surrounding forest.

It may be of interest to learn that the plan advocated by Mr. Hodgins has been tried out in California with rather promising and satisfactory results. In a manuscript dealing with the subject of fire in the National Forests of California, it is reported that 4,600 snags on

2,000 acres were burned down at a cost of six cents per snag; 115 snags per man-day were accounted for as an average day's work. The paper suggests that elimination of snags by burning may be found practicable on:

1 - Timber sale areas
2 - High risk areas along roads, camping grounds, etc.
3 - Natural fire barriers, such as open ridges, creeks, etc.
4 - Along probable lines of defense, such as roads, streams and the like.

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With the approach of the winter season, Forest officers may well consider the applicability of this practice to special risk areas under their jurisdiction, particularly in localities where the timber is large and tall and where the snags are of resinous character.--H.R.Flint.

Another Appreciation: "Mr. W. B. Wiley, Supervisor of Jefferson National Forest, Great Falls, Montana.

Dear Mr. Wiley: Like millions of other busy Americans, I have always subscribed to the theory that every Bureau of our Government operated with efficiency at the irreducible minimum and that Federal employees attitude toward the national citizenry was based on the policy. 'The public be damned.' I am agreeably surprised to find that the foregoing does not apply to the Forest Service.

About ten days ago I had the misfortune to wreck my automobile on King's Hill and I am indebted to Mr. R. Annan, Mr. E. F. Helmers and members of the Government road crew for speedy and efficient assistance in my difficulty and kindly ministrations to an injured member of my party.

The treatment accorded me by these gentlemen is a splendid tribute to the high character of the personnel of your organization and their consistent refusal to accept pay for the services rendered is splendid evidence of their loyalty to you and the Service.

Men like Mr. Annan and Mr. Helmers make this a better world to live in and I commend them to you as lieutenants worthy of your able leadership.

Very truly yours,

(S) E. J. Dailey,
#8 Second St., N.,
Great Falls, Montana."

And if a road crew would do this much, what would a real honest to goodness Forest Officer have done?

He Had Heard It Before: District Forester (on inspection trip):
"Don't you know you shouldn't smoke?"
New Smokechaser: "Yes sir, so my friends say."
D. F. - "But you must not smoke!
N. S. - "Yes sir, so my doctor advises."
D. F. -"But, damnit man, you SHANT smoke!
N. S. - "Yes sir, so my wife tells me."

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DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Metal Road Signs Superior to Wooden: After one year's use of metal signs, it seems that the board signs bearing the tree marker, with which visitors to D-2 have been familiar for the last six years, will soon be a thing of the past. The metal signs secured last year from the Enameled Products Company have proved to be both attractive and serviceable. Fear that the enamel signs, which are easily damaged by rocks or shooting, would not be practicable on account of carelessness from the traveling public were evidently groundless, since reports from the Supervisors indicate that very little damage has occurred during the past season. The new signs are smaller and much easier to handle in pack outfits, which is a decided advantage from the Rangers' standpoint.

* * *

Rabies: At a meeting of the Querna Verda Livestock Association at Gardner, Colo., Nov. 23, plans were formulated in cooperation with the Biological Survey and the Colorado Stockgrowers Association to attack the rabies problem which has developed in that locality. Agreement was reached whereby all mongrel dogs would be destroyed and all valuable dogs muzzled. The Biological Survey has entered upon a vigorous campaign of poisoning and hunting and is endeavoring to throw a cordon around the territory presumed to be affected. One of the more recent incidents is that of a pet dog biting a woman. This dog and another were known to attack a coyote a few weeks before, which undoubtedly was affected with hydrophobia.

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DISTRICT 3 - SOUTHWESTERN DISTRICT

"Overtime": Taking the time of fifty District Rangers from the fourteen Forests as a cross section for the hours worked by 128 men in this District doing similar work shows that the Forest Service gets yearly the services of twenty-four extra men over and above the services of the regular 128 men if they worked but eight hours per day, did not work on Sundays and holidays, and took 15 days annual leave. In other words, the legal requirements call for 2,328 hours if no sick leave is taken and the fifty men averaged 2,764 hours in 1923 and 2,850 hours in 1922.

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Arizona Cypress Makes Good: According to Mr. Pearson, who has just made an examination of the Forest plantations on the Cameron Creek watershed above Ft. Bayard, the planting stock of western yellow pine propagated from seed from Arizona and New Mexico is superior to that propagated from seed secured in the Black Hills. This showed up during the past few years of drouth. The native stock was much more drouth resistant. The outstanding feature of these plantations is the remarkable showing of Arizona Cypress (_Cypressus glabra_). A few plots of this species were established between 1911 and 1914 on a north slope on land better than the average planting site, but still a poor site for yellow pine. The trees show no signs of suffering from the drouth. They are from 12 to 18 feet in height, fully twice as high as yellow pine of the same age. Moreover, they are far superior to the yellow pine as a watershed tree because they form a compact crown extending clear to the ground, whereas yellow pine drops its lower branches early in life.

* * *

"Arizona Plan" for Game Law Revision: Here is, briefly, the "Arizona Plan" for game law revision. (1) Drafting of brand new code by the Committee of Seven, representing the Arizona G.P.A. in all parts of the State (now under way); (2) joint meeting of Code and Executive Committees in Phoenix, probably next month, to consider the draft; (3) submission of code to association for approval; (4) presentation to the legislature or the people for enactment into law.

It seems certain that an up-to-date code, patterned after the best in other States, will be recommended. Features prominently advocated are: a commission of three with broad powers, including appointment of State game warden and establishment of refuges; more protection, especially later and shorter deer season; and more drastic penalties for violations. The main obstacle in the path of the code makers seems to be that the present Arizona law is an initiative act, must be repealed by the people, and, in all probability, replaced by initiative measure. A thoroughly aroused public sentiment, through activity in every part of the State, is essential to success. Local associations, wherever organized, are eligible in Arizona G.P.A. membership and should get in touch with President Tom McCullough of Flagstaff.

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DISTRICT 4 - INTERMOUNTAIN DISTRICT

Life of Cut-Back Poles: Recently the Metropolitan-Edison Company of Reading, Pa., informed the Forest Products Laboratory at Madison that when they set a new untreated pole they can get a serviceable life of approximately 15 years from it, and when they take this pole and saw off the butt, including all of the rotted portion, there remains a shorter pole which is apparently quite sound, but upon setting this shorter pole they can get from it two or three years more life.

Upon inquiry the Mountain States Telephone & Telegraph Company at Salt Lake City inform us that they count on a cut-back pole to last about five years, and by shaving and brush treating, from two or three years' additional life may be secured. The poles used by this company, however, are practically all Idaho or Washington cedar. The company states soil conditions have a great deal to do with the length of time that poles will last, and that undoubtedly a cut-back pole has lost much of its power to resist decay.

The Utah Power & Light Company states that from their experience the life of cut-back poles depends very greatly upon the soil condition. As an average they state that cut-back poles should last four or five years, although some of their cut-back poles have rotted within two or three years, and others have lasted very much longer than the average. In general, they find that poles set in soil which is permanently damp last for a long time, whereas those set in sandy soil do not last so long. They suggest that holes from which other poles have been taken are contaminated with wood destroying fungi, and this accounts for the reset pole becoming infected more rapidly. They suggest also that in many cases old cut-back poles become so thoroughly dried that the moisture is more easily absorbed and withdrawn by evaporation, which would, of course, be more conducive to rapid decay. Their experience is that cut-back poles which have been brush treated before resetting last at least seven or eight years in the section about Salt Lake City.

Pine Butterflies: Mr. C. B. Morse met Mr. J. C. Evenden, Forest Entomologist of the Bureau of Entomology, in Idaho recently and went over with him some of the more badly infested butterfly areas in the vicinity of the Payette and Idaho Forests. These butterflies have completely defoliated the western yellow pine in a considerable part of this region, and Morse and Evenden made an examination to decide whether marking practice should be modified on account of the destruction caused by the butterflies. It is evident that there is going to be a loss, but it will occur chiefly in large, old, overmature trees with little vitality - the very trees that will be cut anyway. Accordingly, there appears to be no reason for modifying marking at the present time, as most of the young and vigorous trees will probably pull through all right.

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DISTRICT 5 - CALIFORNIA DISTRICT

Fire Pumps: A summary of the results of the use of rotary motor pumps in connection with forest fires this past season will be of interest to all field officers:

Forest	No. Fires	Maximum Distance Hose Used	Av. Run	Max. Run	Kind of Equip.
Stanislaus	3	500 feet	53 m	1 hr. 30 m.	Evinrude
Plumas	10	650 "	5 hr. 45 m	12 hrs 0 m.	"
Shasta	3	500 "	6 hr. 0 m	8 hrs 0 m.	Wonder

The Shasta has also had a great deal of success in using a hand force pump. Ranger Meyers, of the Shasta, used one of these pumps on eight fires on the Lava Beds, and it is reported that on one fire he had to pack the water one and one-half miles on his back. The equipment used consisted of an Alaska pack board to which is attached a five-gallon tank.--E.I.K.

Summer Home Owners Form Association: Summer home site owners on the Lincoln Highway in the American River Canyon and on the Placerville summit, Eldorado National Forest, recently held a meeting and organized the American River Summer Home Association. There are about 300 summer homes in this region with a valuation upward of a quarter of a million dollars. The purpose of the association is to cooperate with Supervisor E. F. Smith in order to:

1. Provide adequate protection of property during the period when owners are unable to occupy their homes.

2. Make definite the matter of water rights.

3. Give intelligent support to agencies working for better road conditions.

WILLIAM, AND ROY AND NICK

(With Apologies to Eugene Field, William B. Greeley,
Roy Headley, E. E. "Nick" Carter and a Lot of Other Folks.)

William, and Roy and Nick one night
Sailed off in a redwood shoe.
(Out to the West - I think I'm right.)
'Twas a daring thing to do!
"Where are you going, and what do you wish?"
A Congressman asked the three.
"We're trying to sell to 'the man on the street'
The problems of for-est-ry;
Words of wisdom and warning have we!"
Said William,
And Roy
And Nick.

The old moon laughed and hummed a song,
As they headed away to sea.
And their "hot air" carried them swiftly along
From the shores of old D. C.
Then the time drew near for each good man
To lend an attentive ear.
"Now pay due heed to our little plan
And please don't think it queer!
It's tough - but we're doing the best we can!"
Said William
And Roy
And Nick.

All night long their spell they cast,
But just as daylight came
The three discovered a fourth by the mast!
(Yes, a Lumberman was his name!)
How he came by the boat they never did know,
Such a thing they had failed to foresee,
But they gave him an oar and bade him row,
Or else swim back to the lea.
"Forsooth, you know, we all live by the tree!"
Said William,
And Roy
And Nick.

Now some believe it was all a dream,
But others say "Bide a wee!"
Perhaps not so strange in years 'twill seem,
Say, 'long 'bout thirty-three.
So shut your eyes while your Uncle sings,
As he "totes" you to and fro,
Of the truly strange and wonderful things
Undreamed of years ago.
To be "pulled" at the next Congressional show,
By William,
And Roy
And Nick.
--WH.

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DISTRICT 6 - NORTH PACIFIC DISTRICT

Heavy Timber Losses Due to Cigarettes: The following resolution was passed by the Pacific Logging Congress in November, 1923:

"For the past five years an average of 442,688 acres of forest land has been burned annually in the States of California, Oregon, Washington, Idaho and Montana, and over 20 per cent of this annual loss is due to careless smoking in the woods, especially of tailormade cigarettes; therefore, resolved, that the Pacific Logging Congress go on record as strongly opposed to the use of all brands of tailormade cigarettes in any woods operation in the Pacific Northwest, and that a copy of this resolution be sent to each of the leading cigarette and tobacco manufacturers of the United States."

Good Chance for Publicity: Ranger H. A. Ritter of the Umpqua has sugsted that automobiles owned by Forest officers be provided with a case for spare tires (on rear of cars) on which is painted "Prevent Forest Fires - It Pays," or some similar legend in the same manner as "Count the Buicks," "Another Nash," etc.--W.H.L.

Lookouts on the Job: On September 6 the Buckley Logging Company fired slashing in Section 33, T. 19/7. The smoke was promptly reported by the following lookouts on the Rainier:

Quartz Mtn.,	approximately	38	miles	away
Bald Mtn.,	"	46	"	"
Kiona Peak,	"	37	"	"
Pyramid Peak,	"	24	"	"

Location was given as Section 27, an error of only 1 section. The fire was west of the summit of the Cascades, near Buckley, and northwest of Mt. Rainier. Quartz Mtn. and Bald Mtn. are east of the summit, in the Naches River country. Kiona Peak is in the Cowlitz country, southwest of Mt. Rainier, and his shot was over very rough territory. Pyramid Peak is the only lookout which would ordinarily have been expected to pick up this fire.--G.E.G.

Snappy Work: Ranger Foote of the Colville Forest has a system of his own when it comes to law enforcement. Recently campers left a fire at the mouth of Deer Creek. Along came truck driver Gil Smith, discovered it, and put it out. Then he speeded up the White truck, using compound high, passed the campers in their rig, notified Ranger Foote, who immediately got Justice of the Peace Ward, and the court awaited the arrival of the accused. Upon his reaching Orient, Ranger Foote gently requested them to call at his office. Gil Smith testified, the accused admitted being camped there but thought he had put the fire out. The Justice fined him ten and costs and gave him a good lecture. The accused was from Idaho. By the way, the Justice works for the Forest Service in the summer time on road work.--L.B.P.

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FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

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THE FOREST SERVICE AND THE NEW YEAR

By W. B. Greeley

New Year's Day is the time dedicated by immemorial custom for good resolutions, many of which are too apt to fall by the wayside before many moons have passed. Be that as it may, it is a fitting time for a group of men and women like that comprising the Forest Service to cast up the books, make a reflective survey of accomplishments and omissions, and try to picture as clearly as possible the important things which lie ahead.

Nineteen twenty three doubtless should not be classed with the more striking and momentous years which stand out in the history of the Forest Service; nevertheless it has recorded substantial progress which may give us real satisfaction. For one thing, it witnessed the complete discomfiture, perhaps the final knock-out, of the effort to take the Forest Service out of the Department of Agriculture; and thereby has confirmed in a very positive way not only the basic organization of our work but the fundamental policies of national conservation which it seeks to promote.

One of the most important issues involved in the general attack was the future development of the forest resources of Alaska. The trip made to the northern Territory by President Harding and his constructive verdict upon its situation and needs, which approved in almost every detail the program of the Forest Service, may not have finally settled the Alaskan question, but has at least made the possibility of upsetting the work and aims of the Service in our northernmost National Forests much more remote and less threatening.

As a business undertaking, the National Forests made a new stride toward self-support by turning in receipts of $5,335,000, with a showing of income-producing business which exceeded that of the previous record year - 1920 - by $540,000. The returns from the great public enterprise in which we are engaged can, of course, be measured only partially in dollars and cents, and we must not fall into the error of regarding cash receipts as the yard measure of efficiency. Nevertheless, a substantial increase in payments to the Federal Treasury in relation to the cost of administration is a strong element in public support, tending to relieve one of the long standing handicaps which the Service has encountered in its efforts to secure adequate appropriations.

The cut of timber from the National Forests reached high water mark at 992,000,000 board feet, with timber receipts of $2,641,000. The National Forests are gradually coming into their own as an important source of supply for America's lumber yards and paper factories; and as the tide of forest industry moves westward their relationship to the pressing problem of timber supply becomes more widely recognized. But the progress in forest management through the study of our operating units and the application of plans for a continuous yield is more gratifying than the increased rate at which our timber is going on the market.

We had a good fire year in 1923, with a refreshing break in the periodic necessity of asking Congress for a deficiency in the fire-fighting appropriation. For the fourth successive season I will be able to report to the Congressional committees that the acreage of National Forest land burned over has been kept within less than two-tenths of one per cent, and that the total damage to Government property has been kept below $250,000.

While we must, in all candor, credit the favorable season with a substantial part in this favorable showing, we can with equal candor say that our fire organization, by and large, is the best we have ever had; that we are getting quicker and more effective action at the front; and that we are making progress toward the 100 per cent efficiency that is our goal. There have, of course, been bad situations and inexcusable breaks; and undoubtedly we are not yet as effectively organized and prepared as we must be to cope with the abnormal year. We still have 25 per cent of Class C fires and the goal of a yearly loss of not more than one-tenth of one per cent of the area under protection is yet to be reached. But I firmly believe that we are gaining ground.

The field organization has, under heavy pressure and many difficulties, completed a thorough and constructive job in the appraisal of the National Forest ranges. Aside from settling, as we hope it will, the grazing fees on a stable and permanent footing, the study and appraisal of the forest range allotments is going to mean better and more constructive grazing administration all along the line. In future years I believe that we shall regard it as one of the outstanding points in the development and administration of the forage resources of the National Forests.

We are putting on an immense job of road and trail building in a way which will stand comparison with any road building organization in the world.

We hope that the past year has witnessed a settlement of the long sought reclassification of salaries throughout the entire Forest Service; and that the process of salary rating authorized by Congress may be consummated in a revised schedule of compensation effective with the next fiscal year. I cannot be overly sanguine as to the immediate fruition of our earnest efforts to secure proper recognition of the zealous and hard-working employees of the Forest Service, particularly those who have suffered so long from the arbitrary limits of the statutory roll. The reclassification skies are still clouded, as they always have been, by conflicting interests and the difficulty of securing unanimity among the employees of the Federal Government themselves. Nevertheless, the passage of the reclassification act last March still stands as a great gain in a prolonged struggle; and whether the final word in the accomplishment of its purpose can be written this year or not we have made headway.

I wish that I could adequately express my own appreciation of the continued loyalty and stick-to-it-iveness of the great bulk of my associates in the Forest Service who have carried on at so much personal sacrifice. The final accomplishment of the reclassification of Service salaries is closer to me than any other single thing that I have set my hand to accomplish.

In the national progress of forest conservation 1923 stands out as a big year. It has witnessed the establishment of two new Forest Experiment Stations whose organization and leadership under such men as Zon and Dana mean a great deal both in spreading the gospel of reforestation and in building up the scientific groundwork for its growth.

We have delivered another telling blow on the economic necessity for a national awakening to the necessity for timber growing. In 1923 the opportunity was presented to bring the situation home to the pulp and paper industry of the United States in a way which is bound to have far-reaching effects. Two additional States have qualified for Federal cooperation, and joined the league for outlawing forest fires. A committee of the United States Senate has made the most exhaustive investigation of timber supply and reforestation yet undertaken by Congress, and will shortly present its conclusions and recommended legislation. Although we cannot hope at present to write the last word in our National Forest policy, we may expect at least much greater support for two of the developments for which the Forest Service has striven many years, namely, a nation-wide extension of fire protection covering all forest lands in all ownerships, and the enlargement of the National Forests.

The Forest Service has been likened a good many times to Alice in Wonderland, in the predicament where Alice had to run as fast as she could in order to stay exactly where she was. Our responsibilities as we enter 1924 make it no time for self-complacency. We need all the alertness and aggressiveness that we can muster. It will take good planning and close management to get away with the job. The increased cutting of National Forest timber places a particular responsibility on the Service. The ideas of good forest management and good forest practice that we have been preaching for many years are coming right home to roost, for the Forest Service is the largest timber operator in the United States.

We are passing the stage of the occasional timber sale and the necessity for capable management of timber on the part of only a small portion of our personnel. We are entering a period, in fact we are already well into it, when we must cut large areas annually and convert all of our Forests from reservoirs of virgin stumpage into producing units. We must do this big job cleanly and well, and in accord with the basic ideas of productive forests and sustained yield around which the Forest Service has been created. Sound management and good silviculture are far more important than the size of the annual cut or the volume of receipts.

We have a special responsibility as well in relation to the general reforestation movement in the United States. Economic conditions have set the stage for a rapid and widespread advance in commercial timber growing by forest landowners generally. The time that our earlier prophets dreamed about has arrived. It is up to us to recognize that it has arrived and to be leaders - aggressive and optimistic leaders - in promoting private reforestation.

Our responsibility in relation to public recreation and the conservation of wild life is now more clearly recognized by the nation than ever before; and we must recognize it clearly ourselves.

We are going to face difficult problems in maintaining and perfecting our fire protection work and in doing all of the things which ought to be done and which the public looks to us to accomplish with the resources that are made available. Whether we like the term or not, the development of our work in volume and the accumulation of experience in varying methods is necessarily standardizing the work of the Forest Service more largely as time goes on. And as this necessary development tends in some respects to change the character of the job of many

Forest Service men, it is encumbent upon all of us to do everything within our power to retain the ideals of the Service in regard to individual initiative and opportunities for individual development among its members. That is one of the special things which we must seek for and plan for as the organization grows older.

I have only tremendous appreciation for the good work which the men and women of the Forest Service have done in the past year. I have a deal of hopeful confidence for the future. President Roosevelt said at one time that he was only an average man but that he was everlastingly at work at being one. That might well be taken as a good motto for all of us.

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A LETTER THAT SPEAKS FOR ITSELF

The Secretary of Agriculture

Washington

December 22, 1923.

Dear Colonel Greeley:

I do not want to let 1923 come to an end without expressing my sincere appreciation of the fine spirit with which the work of the Forest Service has been carried forward during the year. I am justly proud of this Department and the splendid men and women who are responsible for the efficient service it renders. I hope you will accept for yourself and pass on to all of the members of the Forest Service my best wishes for a Merry Christmas and a Happy New Year.

Sincerely,

HENRY C. WALLACE.

To Col. W. B. Greeley,
Forester.

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WASHINGTON NOTES

Lecturers in Demand: Calls for Service men to address clubs, schools, and business men's organizations on forestry subjects are being received as a result of the good work H. N. Wheeler, in charge of PR at Denver, performed while in the city during November. Assistant Foresters Barnes and Herbert A. Smith have been fulfilling several engagements lately and expect to put over their Chautauqua stuff many more times during the winter.

Fire Prevention Slogans on Campaign Literature: We have always believed in the efficacy of fire prevention slogans, but it remained for Charles H. Rich of Woolrich, Pa., to include PR work in his campaign to be elected Associate Judge in the elections of last November. On his campaign cards he had printed these slogans: "Prevent forest fires - it pays"; "Forests protected will build your town"; "Forests prevent serious floods"; "Forests help to prevent drought"; "Forests help game and fish"; "Forests mean health, wealth, and happiness for all and an inheritance for our sons and daughters."

Mr. Rich was elected by a large majority, of course.

Louisiana to Have Forestry Taught in Public Schools: T. H. Harris, Superintendent of Education in Louisiana, has approved the teaching of forestry in all public schools of the State, and the State Forester has been requested to furnish material for text books to be used by the school children, according to the Louisiana Conservation News.

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FOREST PRODUCTS LABORATORY

The Oldest Wood: Here comes Assistant District Forester C. L. Hill of District 5 with the very oldest wood. He sends a sample to the Laboratory that antedates so completely everything previously heard of that there is no hope for rivalry by others. Wood a million years old has the sound of a California tale, but Hill seems to have the evidence when he writes: "This piece of wood was taken from 500 feet under ground in a tunnel of the California-Hawaiian Development Company in Long Canyon, Township 13 N., Range 12 E., M. D. M., California, on September 17, 1920. The log was buried in the gravels of a Tertiary streambed about 12 feet under the lava cap of the grade flow which terminated the Tertiary period. It is, therefore, at least a million years old and it is rather remarkable in the fact that it is neither silicified, nor disintegrated except as to the lighter springwood of some annual rings."

A Million Dollars for Forest Research? One million dollars a year for forest research and investigation, including studies in forest taxation, is what the National Forestry Program Committee, of which R. S. Kellogg is chairman, recently recommended to the Senate Forestry Committee.

The National Forestry Program Committee represents the American Pulp and Paper Association, American Newspaper Publishers' Association, American Forestry Association, Wood-using Industries, and other organizations interested in forestry.

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FOREST EXPERIMENT STATIONS

Henry Ford's Logging: The Lake States Forest Experiment Station has just completed a study of the Henry Ford operations in the northern part of Michigan. Mr. Mitchell reports that while Ford can hardly be said to be practicing forestry he is leaving his cut-over lands fairly safe from fire and in excellent shape for natural reproduction. On the other hand, he is logging as close and his utilization is but little better than that of the average logger. He is not falling his snags or unmerchantable weed trees as he should do as a matter of fire protection. Although some small merchantable stuff is left standing, there is not enough of it to warrant a second cut short of a full or nearly full rotation. Whether or not, considering the character of the stands being cut, it would pay to leave more merchantable timber for a second cut is a question. It is doubtful, however, since the stands in question are largely overmature and do not contain enough young and middle aged trees to form the basis of a second cut. For the most part, also, they are not heavy enough to justify cutting over twice.

Another Chestnut: While the chestnut blight is still spreading here in the United States it is interesting to note that the French are having trouble with an "ink" disease on their chestnut trees as well. So far the disease has not been successfully fought and large tracts of timber have been doomed, especially in the region where the chestnut has been grown in orchards. Recently the French government has introduced a number of Chinese chestnuts which have so far bbeen very resistant and in some cases immune to the disease. Two nurseries are now in operation furnishing chestnut plants to growers at 50 centimes per plant. The Chinese chestnuts appear to be successfully acclimated.

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DISTRICT 1 - NORTHERN DISTRICT

"Captain Kidd" Makes a Call: In conformance with the established custom of the Section to entertain at an informal luncheon distinguished visitors in the profession of Forestry, the North Rocky Mountain Section of the American Society of Foresters, on December 8, enjoyed meeting Assistant Forester Earl H. Clapp (nicknamed C.K., standing for Captain Kidd because of his well known proclivities regarding men and funds) and profited from his remarks descriptive of the progress of Forest Research as an interest of the general public.

What is Wrong with This Picture? Take a slant at the Literary Digest of November 3 - the front cover. Is this your visualization of a Ranger? How many of you have horses which can balance on their two east side feet and joyously hang the western hoofs up in the air for an indefinite period, just like that? And what in time is the "head" ranger doing with those dinky little field glasses, ahorseback and after dark? And why does the bronc look pleasantly and full faced toward the blaze, while the Ranger shields his face - and the fire a good mile away? And what sort of a spotlight was directed on the shaded sides of the party? Another forest fire to right of them? And lookit the hay-wire hitch on the pack!! Well - anyway, outside of these and a few more items, it's about the way we might have thought a Ranger looked before we knew what a Ranger looked like.

AT THE END OF THE FIELD SEASON

by J. C. Whitman, in "Custer Cowboy"

"Who's the stranger, mother dear?
Look! He knows us! ain't he queer?"
"Hush, my own! Don't talk so wild,
That's your father, dearest child!"
"He's my father? No such thing!
Daddy died, you know, last spring!"
Father didn't die, you chump!
Father's been out in the stumps,
But the field season's o'er, so he
Has no place to go, you see!
No place left for him to roam,
That is why he's coming home.
Kiss him. He won't bite you, child,
All these Forestry guys look wild!"

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DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Published Articles: Refer to "Service Holds Lead-in Published Articles," page 4 of the November 26 issue of the Service Bulletin. After reading three or four of these notices, my curiosity was aroused, and when the next copy of the Official Record (Dec. 5) came to my desk I turned first to the "Articles in Current Publicationsby Department Workers" just to see how far in the lead we were this time. What was my surprise when I found that not a single article had been contributed by the F. S. We had dropped from 64 per cent to 0 in one month.

Not being satisfied with this condition, I went to the files for further information. I examined first the November 28 list, then November 21, August 1, May 23, April 25, April 18, April 4, March 21 and February 28; ten in all and the Forest Service not mentioned. I gave it up. What is the editor trying to do to us anyhow? He fooled me for nearly a year, but as long as we can read how does he expect to fool us always?--P.K.

My dear P.K.--I wouldn't fool you for the world, even though fooling you might be the easiest task imaginable. The point is that I also made some investigations concerning the percentage of fluctuations and found that it is customary for the Official Record to save up the Service list for several weeks at a time and then to give the world both barrels at once. Hence we hit on all six one week only to backfire the next. Am I pardoned for causing you so much bewilderment? Thanks.--Editor.

D-2 Study Courses Recognized: The Colorado Agricultural College at Fort Collins has recognized our study courses and has offered to give Rangers entering their ranger course advance credit for grades received in our correspondence study courses.

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DISTRICT 3 - SOUTHWESTERN DISTRICT

King of the Crook: Mr. Rex King has taken up his duties as Supervisor of the Crook National Forest, Safford, Arizona, vice T. T. Swift, who was transferred from the Crook to the Tonto some months ago. Mr. King has had a long line of forestry experience. His first Forest Service assignment was that of Forest Guard on the Sitgreaves in 1909. He was a Forest Assistant on the Apache and Arkansas, Forest Examiner on the Ozark and for eight years in the District Office of Lands. He went to the Santa Fe in 1921. Supervisor King has an A. B. degree from Syracuse and M.S.F. from Michigan Forestry.

Tales of Early Forest Service Days: New book tells story of struggles in getting started when the Jemez was young. Rangers were of various sorts and the job was big. As in many other sections of the country there was a patron who owned cattle and sheep and who held his followers in line by keeping them in debt to him. He was a political boss, too, a major domo, and named members to the legislature and specified who should fill county offices. He clashed with the newly made "reserve" on matters of range control. So much is gathered from a few advance pages sent out by The Spencerian Press, Boston, the publishers of "Ranger District Number Five," a new book written by Hunter S. Moles, Assistant Director of Extension of the New Mexico State College. The characters in the book are actual people given other names and the time about 1909 or 1910. The scene is in the vicinity of Cuba, New Mexico.

So vividly are the character pictures drawn that some of the older members of the D.O. have already picked out the real persons that probably unconsciously furnished the material for the story. Ortega, the boss who had big buck niggers to put out of the way those who crossed his will, was undoubtedly a certain well known character who held that country in terror for years. He is dead now. Old Mack, the Forest Supervisor, was likely Ross McMillen, and Mr. Ensley, the Forest inspector, T. S. Woolsey. The author credits Arthur J. Wells, who was employed as a Forest Guard and Ranger on the Jemez from 1909 to 1912, as the chief source of the information that has been woven into the narrative.

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DISTRICT 4 - INTERMOUNTAIN DISTRICT

Period Study Curiosity: Last spring while Grazing Examiner Lommasson was making period studies on the Weiser Forest, he found two areas of bunch grass range that were practically identical in topography, elevation, soil, etc. One of them was on the south exposure and the other on the west. Normally, forage on the area with the south exposure should develop about five days earlier in the spring than that on the west exposure. As a matter of fact, the case was practically reversed and the south slope came along about five days after the west. In looking for the cause of this peculiar circumstance, Lommasson learned that the area with the west exposure was cropped once a year in the spring and the stock were turned on when the vegetation was developed enough to properly support them. The area on the south slope had been grazed about 25 days too early for many years and the stock went over the area twice, the second time in the fall, consuming the second growth which is very considerable in that region, thus weakening the plants as the winter approached. On account of this destructive grazing the vegetation on the south slope which should start well in advance of that on the west slope, was actually considerably behind.

What Good Is Timber Reconnaissance? A man representing Pocatello interests was an office visitor not long ago. He represented a group of men who wish to enter the railroad tie-producing business on a small scale at first. Their intention is to start out with $50,000 to $100,000 capital, and under the circumstances are looking for a place where there is a good body of tie timber that will not be expensive to exploit, and where the trees will run high in hewing timber for ties, as they do not feel able to finance a sawmill at the beginning. We were forced to tell them that we had nothing to offer them offhand. This was simply because we have no timber estimates of bodies of timber of this kind whereby the character of timber and cost of logging is definitely shown. You cannot sell goods without knowing what you have to offer. The Gray's River chance, which is on the market, is too big a proposition for them to swing at the present time, and beyond this we know little definitely of our lodgepole pine railroad tie proposition.

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DISTRICT 5 - CALIFORNIA DISTRICT

Conference of Recreation Executives: The Pacific Coast Conference of Recreation Executives was held at Stockton on November 30 and December 1. Representatives from the recreation departments of San Francisco, Los Angeles, Marysville, Modesto, Berkeley, Oakland, Stockton, Portland (Ore.) and the Forest Service were present. District Forester Paul G. Redington addressed the conference on the subject, "Opportunities for Recreation in the National Forests," pointing out that the use of the National Forests for recreation purposes was considered one of the "highest uses," and that the Service was always ready to aid any city or town in the selection of municipal camp sites, and to render any other service possible for recreation use.

Municipal mountain camps in the National Forests received the attention of the executives, and different phases of camp activities were discussed by representatives from Stockton, Berkeley, Oakland, Sacramento, and Los Angeles. Superintendent Raitt of the Los Angeles recreation department told how his city had established a municipal camp at Mammoth on the Inyo Forest, 336 miles from Los Angeles. Fifty guests were entertained the first season at a cost of $26.50 for a two weeks period.

There are now 15 municipal recreation camps in the National Forests of California, representing an outlay of over $250,000.

Adjusting Grazing Problems on the California Forest: The grazing reconnaissance that has been in progress during the past season on the California Forest has developed far enough to indicate the outstanding needs in handling the sheep ranges on that Forest. Grazing Examiners Cronemiller and Smith, who have been doing this work, recommended that the opening of the summer grazing season be postponed about one month in order that the forage might make a vigorous growth before being grazed, and that the number of stock using the sheep allotments be materially reduced.

A meeting of the sheep permittees using the Californoa Forest was called by Supervisor Coffman during November at Corning to consider ways and means of carrying out the recommendations of the reconnaissance crew. In addition to the local Forest officers, Mr. Nelson and Mr. Hill, of the District Office, attended this meeting. Practically all of the permittees were present and acquiesced in the contention of the Forest Service that relief measures were necessary in order to restore and protect the range. One of the plans proposed to meet the needs of the range was the practice of early lambing so as to dispose of the lamb crop in May - before the foxtail becomes troublesome. (The awns of this grass, when dry, work into the wool of the sheep and often cause blindness and much distress, particularly among unshorn lambs.) The plan would enable the sheep to be held on the spring ranges until the summer ranges were ready for grazing and by eliminating the lambs from the Forest would greatly relieve the demands upon the supply of summer feed. Early lambing is practiced generally in the lower Sacramento and San Joaquin valleys and by some sheepmen adjacent to the California Forest. Many permittees on this Forest feel that the plan is not practicable under the conditions governing their operations. They recommended that the desired protection be secured by readjustment of spring and summer ranges on the Forest and by practicing better handling of stock.

In order that definite plans may be developed to meet range requirements with the least possible disruption of the sheep industry, the permittees appointed an advisory committee that will confer from time to time with the Forest officers regarding plans for adjusting the grazing problems. Arrangements have been made to hold the first of these conferences in January, at which time definite proposals will be ready for discussion.--R.R.H.

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DISTRICT 6 - NORTH PACIFIC DISTRICT

Among the D-6 Highbrows: In revising the Department of Agriculture bulletin, "A List of Workers of the U. S. Department of Agriculture," this District was asked to furnish a list of all Forest officers who held college or university degrees. The census revealed that 57 men in the District held 88 college degrees, there being 14 different degrees - about everything except D. D. and M. D! Only three men qualified as the real highbrows having 3 degrees after their names. The degrees ran about like this: 20 Masters of Forestry, 18 Bachelors of Arts, 16 Bachelors of the Science of Forestry, 15 Bachelors of Science, 7 Masters of the Science of Forestry, 2 Doctors of Philosophy, 2 Bachelors of Philosophy, 2 Masters of Arts, and 1 each of Bachelor of Law, Master of Law, Bachelor of Science of Horticulture, Mechanical Engineer, Bachelor of Science of Horticulture and Forestry and Bachelor of Science of Agriculture.

Trail Tested Out by Blind Man: The mountaineers recently made a good test of the Snow Lake Trail constructed by the Forest Service by taking Mr. Hartman - a blind man - over the trail. Mr. Hartman walked the entire distance of eleven miles without any assistance, which is a good recommendation for a trail running from an elevation of 3,000 feet to that of 4,500 feet in a very mountainous country.--F.B.K.

They Get It: The Santiam reports a case which they think deserves the fur-lined cuspidor. One of their lookouts was careless with a cigarette, caused a fire, extinguished it, reported himself, came in, was fined and canned. Can you beat it?

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